



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



32101 065107805

6622
872
2 1003/10
1913/14

Library of



Princeton University.

LEL

R

622 add
-5

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS

1910

TRUSTEES' SERIES

NO. 19

SEVENTH ANNUAL
REPORT OF THE PRESIDENT
OF THE
UNIVERSITY

FOR THE YEAR ENDING JULY 31, 1910

STANFORD UNIVERSITY, CALIFORNIA

PUBLISHED BY THE UNIVERSITY

1910

Leland Stanford Junior University Publications

Trustees' Series

NO.	DATE
1. The Leland Stanford Junior University. A pamphlet of information.....	(No date)
2. Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3. Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4. Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5. Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6. Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees.....	April 25, 1903
7. Petition filed in proceedings to establish and construe University Trusts.....	June 16, 1903
8. Decree in proceeding to establish and construe University Trusts	July 3, 1903
9. Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees.....	July 6, 1903
10. Organization of the Faculty of the University.....	March 31, 1904
11. Report of the Organization Committee of the Trustees upon the Organization of the University Faculty	March 31, 1904
12. First Annual Report of the President.....	December 31, 1905
13. Second Annual Report of the President.....	April 30, 1906
14. Third Annual Report of the President.....	December 31, 1906
15. Fourth Annual Report of the President.....	December 31, 1907
16. Trustees' Manual	November 1, 1908
17. Fifth Annual Report of the President.....	December 31, 1908
18. Sixth Annual Report of the President.....	December 31, 1909
19. Seventh Annual Report of the President.....	December 31, 1910

TABLE OF CONTENTS

PRESIDENT'S REPORT

	PAGE
Reconstruction of Buildings	5
Attendance of Students	5
Limitation of Women Students	7
The Incidental Fee	7
West Memorial Lectureship	8
Faculty Deaths	9
Cooper Medical College Transfer	10
Faculty Changes	10
Faculty Publications	14

APPENDICES

I. Departmental Reports:

Greek	21
Latin	21
German	23
Romanic Languages	24
English Literature and Rhetoric	26
English Philology	28
Philosophy	28
Psychology	29
Education	30
History	31
Economics and Social Science	33
Law	34
Graphic Art	36
Mathematics	37
Applied Mathematics	38
Physics	38
Chemistry	39
General Botany	43
Systematic Botany	44
Physiology and Histology	46
Hygiene	47
Zoology	48
Entomology and Bionomics	49
Geology and Mining	51

(RECAP)

513165

	PAGE
Mechanical Engineering	54
Civil Engineering	56
Electrical Engineering	57
Medicine	59
II. Reports of Committees :	
Student Affairs	62
Literary Contests	65
III. Report of the Registrar	66
Statistics of Entering Class	67
Distribution of Entering Class	68
Entrance Examinations	71
Registration of Studies	73
Statistics of Graduation	74
Faculty Legislation	75
IV. Report of Special Committee on University Organization	78
V. Report of the Librarian	85
VI. Report of Dean of Women	93
VII. Report of Student Adviser	94
VIII. Report of the Chaplain	95
IX. Report of the Curator of the Museum	96

REPORT OF THE PRESIDENT

*To the Honorable Board of Trustees,
Leland Stanford Junior University.*

GENTLEMEN :

I submit herewith my report as President of the University for the academic year ending July 31, 1910.

The work of the year has in all respects been very satisfactory. No event of striking importance has occurred, but in all departments thorough work has been done and the attitude of the student body has been excellent.

The only important building additions for the year have been the construction of laboratories for the three new divisions of Medicine to be located at the University. The Reconstruction of Buildings laboratories for Anatomy were completed during the course of the past year, and those for Bacteriology and Pharmacology are approaching completion, the work of these two divisions beginning with the current academic year.

The total attendance of students for the year has been 1760 as against 1681 for the preceding year. Of these students 157 were in graduate standing, 38 of them being candidates for advanced degrees. By major subjects these students may be classified as follows:

ATTENDANCE FOR 1909-10 BY MAJOR SUBJECT

	Graduate	Under-Graduate	Special	Total
Greek	3	8	—	11
Latin	12	28	—	40
Germanic Languages	9	85	—	94
Romanic Languages	3	37	—	40
English	17	131	1	149
Psychology	—	3	—	3
Philosophy	1	4	—	5

Education	8	31	—	39
History	16	134	2	152
Economics and Social Science.....	13	132	12	157
Law	26	*36	24	86
Pre-Legal Course	—	185	4	189
Graphic Art	2	43	2	47
Mathematics	2	20	—	22
Physics	5	8	—	13
Chemistry	5	70	4	79
Botany	4	25	—	29
Physiology and Histology	4	63	3	70
Zoology	5	18	1	24
Entomology	2	10	1	13
Geology and Mining	6	89	5	100
Civil Engineering	2	178	16	196
Mechanical Engineering	2	60	7	69
Electrical Engineering	1	100	7	108
Medicine..	9	†5	†1	15

The great majority of these students are as usual from the state of California, but forty other states and territories are represented and 33 students are enrolled from foreign countries. The distribution of the students by place of residence is as follows:

California	1364	Texas	3
Washington	42	Wyoming	3
Oregon	30	Kentucky	2
Iowa	25	Maine	2
New York	25	Michigan	2
Illinois	25	North Dakota	2
Colorado	19	Tennessee	2
Utah	17	Vermont	2
Montana	16	Alabama	1
Hawaii	14	Alaska	1
Ohio	12	Arkansas	1
Indiana	11	Connecticut	1
Kansas	11	Maryland	1
Pennsylvania	10	Mississippi	1
Arizona	9	Rhode Island	1
Missouri	8	Japan	9
Idaho	7	Australia	5
Nevada	7	Canada	4
Massachusetts	5	India	3
Minnesota	5	Mexico	3
Nebraska	4	China	2
New Mexico	4	Holland	2
Wisconsin	4	Austro-Hungary	1
District of Columbia.....	3	Chile	1
New Jersey	3	England	1
Oklahoma	3	Ireland	1
South Dakota	3	Switzerland	1

*Seniors in Pre-Legal Course counted as Law Majors.

†Also registered as Physiology Majors.

Heretofore little or no serious difficulty has been experienced in the administration of the 500-limit for women students. A considerable number of students in excess of the maximum have for a year or two perfected applications for admission, but the number of vacancies in the list from one cause or another have been sufficient to leave places for all young women who have appeared on registration day. The conditions during the past summer and at the registration in the fall of 1910 changed this and present a problem which will doubtless increase rather than diminish in difficulty in the future. Few vacancies occurred among those seeking admission and at registration day a considerable number of young women in excess of those who could be provided for were in attendance and were forced to make arrangements elsewhere. This difficulty can be temporarily overcome by offering less encouragement to young women to seek admission to our freshman class, but it is an open question whether it would not be better to eliminate the young women from this class, requiring them to present sophomore standing on entrance. The number of freshman women that can be received at present is small and must decrease. This matter should receive careful consideration.

The University has never made a charge for tuition to students in non-professional courses. At first no general or incidental fee, such as is customary even in the state universities, was charged at Stanford University, but during the period of litigation such a fee was imposed in the sum of \$10 per semester for regular students and \$15 per semester for special students in undergraduate standing. This fee was waived in the case of students residents of California after the action of the Legislature in granting the University exemption from taxation on certain portions of its property, but remained in force in the case of students from outside the state. By action of the Board of Trustees taken on April 29, 1910, an incidental fee of \$15 per semester has been established, chargeable against all undergraduate students except those paying tuition fees in professional

courses, this fee taking effect at the beginning of the academic year 1910-11 and the income from it being devoted to expenses of administration and maintenance affecting the general student body, as heating, lighting, janitor service, repairs to buildings, furniture and apparatus, and like expenses.

On February 25, 1910, the University received from Mr. and Mrs. F. W. West, of Seattle, Washington, a sum of money for the endowment of a lectureship in memory of their son, Raymond F. West, who met his death by drowning while a student in the University. The terms of this gift are as follows and may be here recorded:

**West
Memorial
Lectures**

In memory of our beloved son, Raymond Frederic West, a student in Leland Stanford Junior University, who was drowned in Eel River, in California, on January 18, 1906, before the completion of his college course, we wish to present to the trustees and authorities of the Leland Stanford Junior University, at Palo Alto, California, the honored Alma Mater of our son, the sum of ten thousand dollars (\$10,000), to be held as a fund in perpetual trust, for the establishment of a lectureship on a plan similar to the Dudgeon Lectures and the Ingersoll Lectures at Harvard University.

By this plan, in each collegiate year, or on each alternate year, at the discretion of the Board of Trustees, from one to three lectures shall be given on some phase of this subject: "Immortality, Human Conduct, and Human Destiny."

Such lectures shall not form a part of the usual college or university course, nor shall they be delivered by any professor or instructor in active service in the institution. Such lecturer may be a clergyman or a layman, a member of any ecclesiastical organization, or of none, but he should be a man of the highest personal character and of superior intellectual endowment. He shall be chosen by the Faculty and the Board of Trustees of said University in such manner as the Board of Trustees may determine, but the appointment in any case shall be made at least six months before the delivery of said lectures.

The above sum is to be safely invested, and the interest thereof is to be divided, at the discretion of the Board of Trustees, into two parts, the one an honorarium to the lecturer, the other for the publication of the said lectures, or the gratuitous distribution of a number of copies of the same if published by the author.

The manuscript of the course of lectures shall become the property of the University and shall be published by the University unless some other form of publication is more acceptable.

The course of lectures shall be known as the "Raymond F. West Memorial Lectures on Immortality, Human Conduct, and Human Destiny."

F. W. WEST,

MARY B. WEST.

Seattle, Washington,
January 18, 1910.

The first series of lectures under this foundation will be given in February, 1911, by the Rev. Charles E. Jefferson, pastor of the Broadway Tabernacle, New York City.

The University Faculty has sustained a heavy loss in the untimely death of two of its members, Professors Bergström and Matzke, the death of the latter occurring near the beginning of the academic year 1910-11. Professor Matzke had been asked to represent Stanford University at the inauguration of the Mexican National University on September 22, 1910. While in the City of Mexico for this purpose, he was attacked by cerebral hemorrhage and died on September 18th. The University is under obligation to the Government of Mexico for its generous and helpful assistance in all matters pertaining to Dr. Matzke's illness and death and for the return of his body to Palo Alto. Dr. Matzke had held the professorship of Romanic Languages in the University for eighteen years. He was a thorough and productive scholar, a successful teacher, and in all his relations an industrious, devoted and thoroughly sincere man, one of those who have done most towards the formation of the ideals of the University. The following is a brief sketch of his life:

John Ernst Matzke was born in Breslau, Germany, October 20, 1862. He was educated at Hope College, Michigan, receiving there the degree of A. B. in 1882, and at Johns Hopkins University, where he received the degree of Ph. D. in 1888. He married Edith Virginia Hedges, June 26, 1895, who with their two sons survives him. Dr. Matzke was professor of French in Bowdoin College, 1889-90; professor of Romanic Languages at Indiana University, 1890-1; associate in Romanic Languages in Johns Hopkins University, 1891-3. He has been at the head of his department in the University since 1893. Dr. Matzke was advisory editor of *Modern Philology* and a member of the Modern Language and American Philological Associations. He was author of various textbooks on French and Spanish and a contributor to philological journals. His death occurred in the City of Mexico on September 18, 1910.

Professor Bergström's death occurred in February, after a relatively brief illness caused by tumor of the brain. He had been but one year at the University, but in that brief time he made a deep impression as a learned scholar, a faithful teacher and a man of rich and noble personality. The following is a brief sketch of his life:

John Andrew Bergström was born on October 28, 1867, at Bildsberg, Sweden. He was brought to this country as a child and educated at East Greenwich (Connecticut) Academy and Wesleyan University, receiving his A. B. degree in 1890, and at Clark University, where he received the degree of Ph. D. in 1894. He was assistant professor of Psychology and Pedagogy in Indiana University 1894-96, associate professor, 1896-02, professor, 1902-08. He began his work at Stanford University as professor of Education in January, 1909. His death occurred at Palo Alto, February 28, 1910. He is survived by his widow and one son.

In this academic year the property of the Cooper Medical College, including the Lane Hospital, Lane Library, and Cooper Hall, was deeded to the Trustees of Stanford University on condition that the University undertake instruction in Medicine. To this end formal work in Medicine was begun in August, 1909, in rooms composing part of the annex to the Leland Stanford Junior Museum. Only first year students were admitted, these corresponding to fourth year students in the University who had made Physiology their major subject. In other words, three years of collegiate work is required for admission to the department of Medicine, this including not less than two years work in physiology and two in chemistry, besides biology, physics, Latin and one modern language. Further details regarding the development of the work in Medicine will be found in the report of the Medical Department.

The following changes in the University faculty took place during the year:

In Greek, Associate Professor Rolfe retired at the close of the year. Assistant Professor Ernest Whitney Martin, returning from two years' leave of absence at the University of Nevada, has been transferred from the department of Latin to that of Greek.

Faculty Changes

In Latin, Professor Fairclough has been granted sabbatical

leave for the year 1910-11 and will fill a professorship in the American School of Classical Studies at Rome. Assistant Professor Elmore has been promoted to the rank of associate professor.

In German, Assistant Professor Danton has resigned to accept a professorship in Butler College at Indianapolis.

In Romanic Languages, Assistant Professor Searles has been made associate professor. Instructors Atkin and Pellissier have resigned to pursue advanced studies at Harvard University. Dr. Aurelio Macedonio Espinosa has been added to the staff of the department as assistant professor in Spanish. Dr. Espinosa is a graduate of the University of Colorado and also of the University of Chicago, receiving the Doctor's degree in the latter institution.

In English Literature and Rhetoric, Everett W. Smith, Stanford 1899, and Edith R. Mirrielees, Stanford 1907, have been added to the department as instructors.

At the close of the year Professor Melville Best Anderson, who had been professor of English Literature since the opening of the University, retired under the provisions of the Carnegie Foundation for the Advancement of Teaching, to devote himself to the study of Dant . By action of the Board of Trustees taken on February 25, 1910, Professor Anderson was made professor emeritus. I may here repeat certain words in appreciation of his work made in my recommendation of this action:

In my judgment, as a teacher of literature, Professor Anderson has no equal in this country at the present time. He has had a wonderful power of bringing before students the actual nature of literary work which they have to study. On the one hand, he has not dissected such work, spending his time on the little details of what this or that sentence means, or when this or that folio was written; and, on the other hand, he has never made himself noted, as many professors have done, by saying beautiful things about authors, the inward meaning of their deliverances, and like things, which direct the attention of the student to the grace of the teacher himself, without bringing him any closer to the subject studied. Professor Anderson has all these years brought students into close, direct, and intimate relation with Shakespeare, Milton, Browning, Tennyson and Dante, and has left with them a knowledge of the thing studied—a taste for it, if it is to their taste; an understanding of it, whatever it may be—such as I have never known any other professor of English Literature to give.

In Education, the death of Dr. Bergström has been mentioned. His place was temporarily filled by the appointment of Mr. Rufus C. Bentley for the second semester. Mr. Bentley becomes a regular member of the department as assistant professor. He is a graduate, A. B. and A. M., of the University of Nebraska, and comes to us from Clark College where he held the position of Dean. There is added to the department for the academic year 1910-11 Dr. Lewis M. Terman as assistant professor. Dr. Terman is a graduate, A. B. of Indiana University, and Ph. D. of Clark University. He comes to us from the State Normal School at Los Angeles.

In History, Assistant Professor Cannon has been absent during the year on sabbatical leave. His place has been filled by Dr. Sedley L. Ware as instructor.

In Economics and Social Science, Professor Allyn A. Young will be absent for the academic year 1910-11, on leave, filling a lectureship at Harvard University. Assistant Professor Millis resumed his work with the second semester after an absence of a year and a half in the service of the U. S. Immigration Bureau. He has been promoted to the rank of associate professor. A similar promotion was given to Dr. James M. Motley, but he resigned at the close of the year to accept a position at Brown University. Dr. Ira B. Cross has been made instructor in the department.

In Law, Professor Huberich has spent the year at the University of Wisconsin under an exchange arrangement with Prof. Howard L. Smith of that institution, who has filled his place at Stanford.

In Applied Mathematics, Assistant Professor Manning has been absent at the University of Illinois in exchange with Mr. E. W. Ponzer of that institution. For the coming academic year Dr. Manning will be absent on sabbatical leave and Mr. Ponzer has been added to the staff of the department as assistant professor. Instructor Jesse D. Suter has resigned and Mr. George F. McEwen, Stanford 1908, has been made instructor.

In Physics, Assistant Professor Brown will be absent during the academic year 1910-11 on sabbatical leave. Mr. Percy A. Ross has been made instructor in the department during his absence.

In Chemistry, Associate Professor Swain has been absent during the year on sabbatical leave.

In Botany, Associate Professor Peirce has been promoted to a professorship.

In Hygiene, Dr. Snow has been absent during the year as secretary of the State Board of Health. His leave has been extended to cover the year 1910-11, the second half of which he will spend on sabbatical leave in study abroad. Instructor Long has been promoted to the rank of assistant professor. Miss Florence Bolton has been absent on leave and Dr. Clelia D. Mosher has been appointed acting director of the women's gymnasium and medical adviser of women.

In Zoology, Associate Professor Price has been promoted to a professorship.

In Geology and Mining, Professors John F. Newsom and James F. McClelland have resigned, the latter to accept a position at Yale, the former to enter practical work. Mr. David M. Folsom, Stanford 1902, as assistant professor of Mining, and Mr. Galen H. Clevenger, Columbia 1903, as assistant professor of Metallurgy, were added to the staff of the department. Instructor Luther W. Bahney has been promoted to the rank of assistant professor, and Assistant Professor Austin F. Rogers to the rank of associate professor of Mineralogy.

In Mechanical Engineering, Professor Durand was absent during the latter half of the year and Associate Professor Eckart during the whole of the year, the latter on sabbatical leave.

In Electrical Engineering, Instructor Hillebrand has been promoted to the rank of assistant professor.

In Medicine, Dr. Arthur W. Meyer has served during the year as professor of Human Anatomy, developing the first year's work in the new department. For the academic year 1910-11 Dr. Hans Zinsser of Columbia University, as associate professor, and Dr. Albert C. Crawford, as professor, will organize the two new divisions in Medicine of Bacteriology and Pharmacology.

In the President's Office, Secretary George A. Clark was absent during the first semester engaged in an investigation of the fur seal herd of Bering Sea for the Department of Commerce and Labor. Mr. John Parks Hemphill, Stanford 1909, filled his place.

The following is a list of the publications of individual members of the University Faculty during the year:

- ABRAMS, LEROY: Studies on the flora of Southern California, III: *Torrey Botanical Club, Bulletin*, 37; March 1910.
- ADAMS, EPHRAIM DOUGLASS: British interests and activities in Texas, 1838-46: Baltimore, the Johns Hopkins Press, 1910. The Albert Shaw lectures on diplomatic history, 1909.—A century of empire, 1801-1900, by Rt. Hon. Sir Herbert Maxwell (review): *American Historical Review*, 15; April 1910.—England and the French Revolution, 1789-97, by William Thomas Laprade (review): *ibid.*, 15; July 1910.—Historical contacts in the high school: *Sierra Educational Review*, 6; April 1910.—Rugby as a substitute: *Kansas Graduates' Magazine*; April 1910.
- ALDEN, RAYMOND MACDONALD: Academic ceremonial: *Independent*, 67; November 1909.—The decline of poetic justice: *Atlantic Monthly*, 105; February 1910.—Rules of the Bodleian, by Lector [pseud.]: *Nation*, 89; November 1909.—Beaumont's Knight of the burning pestle and A king and no king; ed. by R. M. Alden (Belles-lettres series, Section 3, English drama): Boston, Heath, 1910.—Thoreau's Walden; ed. by R. M. Alden. (Longmans English Classics) New York, Longmans, Green & Co., 1910.
- ANDERSON, MELVILLE BEST: Dante in English literature: *Dial*, 48; January 1910.
- BAHNEY, LUTHER WILLIAM: An adjustable pryometer stand: *American Institute of Mining Engineers, Bulletin*, 37.
- BATEMAN, WILLIAM GEORGE (with Swain, R. E.): The toxicity of thallium salts, first paper: *Journal of Biological Chemistry*, 7; January 1910.
- BENTLEY, RUFUS CLARENCE: How shall the American college persist: *Collegiate Alumnae Magazine*, Ser. 3; April 1910.
- BINGHAM, JOSEPH W.: Estates of decedents: *American law and procedure*, 6.—Rights in land of another: *ibid.*, 4.
- BLICHFELDT, HANS FREDERIK: Theorems on simple groups: *American Mathematical Society, Transactions*, 11; January 1910.
- BOLTON, HERBERT EUGENE: Los archivos de Mexico. . . . Traducido con algunos anexos, por el socio lic. José Romero: *Boletín de la Sociedad Mexicana de Geografía y Estadística*, Quinta Epoca, Tomo III, Numero 5. Mexico, 1900.—Concluye, *ibid.* Numero 6 (1909).—Articles on Indian tribes and early missions of Texas: Handbook of American Indians North of Mexico, Part II: *Bureau of American Ethnology, Bulletin*, No. 30.—Historia de Nuevo León con noticias sobre Coahuila, Têjas y Nuevo México. Por el Capitan Alonzo de León, un autor anónimo, y el General Fernando Sanchez de Zamora (review): *American Historical Review*, 15; July 1910.—Portola's letters found: Translation of original letters relating to the Spanish occupation of

- California, discovered by the translator in the Mexican archives: *San Francisco Call*, Sunday, October 17, 1909.
- BRANNER, JOHN CASPER: Chamberlain & Salisbury: College text-book of geology (review): *Science*, 31; January 1910.—Diamond bearing highlands of Bahia: New York, 1909.—Earthquakes in Brazil: *Journal of Geology*, 18; May-June 1910.—Education for economic efficiency: Address before the conference of education in the South: *Proceedings of the 13th Convention for Education in the South*, Washington, 1910.—Geologic work of ants in tropical America: *Bulletin of the Geological Society of America*, 21; 1910.—The luminosity of termites: *Science*, n. s. 31; January 1910.—Slates of Arkansas, by A. H. Purdue, with a bibliography of the geology of Arkansas by J. C. Branner: *Geological Survey of Arkansas*, 1910.—Machado's Los temblores en Chile (review): *Journal of Geology*, 17; September-October 1909.
- CAMPBELL, DOUGLAS HOUGHTON: The embryo and young sporophyte of *Angiopteris* and *Kaulfussia*: *Annales du Jardin Botanique de Buitenzorg*, Ser. 2, Suppl. 3; Leiden, 1910.—The embryosac of *Pandanus coronatus*: *Torrey Botanical Club, Bulletin*, 37; June 1910.
- CANNON, HENRY LEWIN: Character and antecedents of the charter of liberties of Henry I: *American Historical Review*, 15; October 1909.—Reading references for English history: New York, Ginn, 1910.
- CATHCART, ARTHUR MARTIN: Damages: *American Law and Procedure*, 10.—Public service corporations and carriers: *ibid.*, 8.
- CHARTERS, SAMUEL BARCLAY, JR. (with Hillebrand, W. A.): Some phases of transformer regulation: *American Institute of Electrical Engineers*, 29; January 1910.
- CLARK, GEORGE ARCHIBALD: The vocabulary of business correspondence: *Phonographic Magazine*, 24; May 1910.
- COOPER, WILLIAM ALPHA: Alt's edition of Faust (review): *Nation*, 91; August 1910.—The Goethe Society's popular edition of Goethe (review): *ibid.*, 90; February 1910.—Graf's edition of Faust (review): *ibid.*, 90; January 1910.—Graf's Goethe über seine Dichtungen (review): *ibid.*, 89; November 1909.—Morris's edition of Der junge Goethe (review): *ibid.*, 90; January 1910.—Notes on the Goldene Klassiker edition of Goethe: *ibid.*, 90; April 1910.—Notes on the Weimar edition of Goethe: *ibid.*, 90; February 1910.—The revised edition of Biederman's Goethes Gespräche (review): *ibid.*, 90; May 1910.—Two new volumes of the Weimar Goethe: *ibid.*, 90; June 1910.—Volumes I and II of the revised Goethes Gespräche (review): *Modern Language Notes*, 25; June 1910.—A Paracelsian passage in Goethe's Ephemerides: *ibid.*, 25; June 1910.
- CROSS, IRA B: Chinese immigration, by Mary Roberts Coolidge (review): *Economic Bulletin*, 3; June 1910.—Early labor day parades in the metropolis: *San Francisco Labor Clarion*, Sept. 2, 1910.—The economic causes of great fortunes, by Anna Youngmen (review): *Annals of*

- the American Academy of Political and Social Science*, 35; 1910.—Adventures in socialism, by Alex. Cullen (review): *ibid.*, 36; 1910.—History of great American fortunes, vol. I, by Gustavus Meyers (review): *ibid.*, 35; 1910.—Men vs. the man, by R. R. La Monte and H. L. Mencken (review): *ibid.*, 36; 1910.—Socialism in local government, by W. G. Towler (review): *ibid.*, 34, 1909.
- CUBBERLEY, ELLWOOD PATTERSON: Changing conceptions of education: Boston, Houghton Mifflin Co. [1909] (Riverside educational monographs, edited by H. Suzzalo).—Consolidation of schools as a means of securing better school buildings: California Superintendent of public instruction *Biennial report*, 23; pt. 2, 1907-08.
- DANTON, GEORGE HENRY: The date of the scene of Tieck's Sternbald: *Modern Language Notes*, 25; January 1910.—On Chria in Gottsched: *Zeitschrift für deutsche wortforschung*, 11; December 1909.—Palaestra LXXXIV: *Modern Language Notes*, 25; April 1910.—The romantic school in Germany. Review of Wernaer: Romanticism and the romantic school in Germany, *ibid.*, 25; April 1910.
- DURAND, WILLIAM FREDERICK (with Ryan, H. J. and Ensign, O. H.): Preliminary report of consulting board of engineers of the bureau of Los Angeles aqueduct power. Los Angeles, February 12, 1910.
- ECKART, WILLIAM RANKINE: The application of the pilot tube to the testing of impulse water-wheels: *Proceedings of Institute of Mechanical Engineers of London*, January-February 1910. Also published under the title "Impulse water-wheels and the pilot tube": *Engineering* (London), 89; January 1910.
- ELMORE, JEFFERSON: Book of Latin prose composition, Teachers' edition: Boston; Sanborn & Co., 1910.—A real basis for Latin composition: *School Review*, 18; March 1910.
- FAIRCLOUGH, HENRY RUSHTON, ed: Plautus, Titus Maccius: Trinummus: with introduction and notes by H. R. Fairclough (Macmillan's Latin classics): Macmillan, 1909.
- FISH, JOHN CHARLES LOUNSBURY: Coordinates of elementary surveying. Stanford University, 1910.
- FISHER, WALTER KENRICK: New genera of starfishes: *Annals and Magazine of Natural History*, ser. 8, v. 5, February 1910.—New pterasteridae from the North Pacific: *ibid.*, February 1910.—New starfishes from the North Pacific: I, Phanerozonia; II, Spinulosa: *Zoologischer Anzeiger*, 35; March 1910.
- HEATH, HAROLD: The association of a fish with a hydroid: *Biological Bulletin*, 19; July 1910.—A new genus of parasitic gastropods: *ibid.*, 18; February 1910.—Pelagosphaera, a larval gephyraen: *ibid.*, 18; April 1910.
- HEMPL, GEORGE: The linguistic and ethnographic status of the Burgundians: *American Philological Association, Transactions*, 39; 1908.

- HILLEBRAND, WILLIAM ARTHUR (with Charters, S. B., Jr.): Some phases of transformer regulation: *American Institute of Electrical Engineers*, 29; January 1910.
- HOHFELD, WESLEY NEWCOMB: The individual liability of stockholders and the conflict of laws, Part II.: *Columbia Law Review*, 10; April 1910.—Same, Part III.: *ibid.*, 10; June 1910.
- HUSTON, CHARLES ANDREWS: Agency: *American Law and Procedure*, vol. I.
- JORDAN, DAVID STARR: The care and culture of freshmen: *North American Review*, 191; April 1910.—(With Richardson, R. E.) Catalogue of the fishes of Formosa: *Carnegie Museum, Memoirs*, 4; 1909.—(With Richardson, R. E.) Check-list of the species of fishes known from the Philippine Archipelago: Manila, 1910 (Philippine Islands, *Bureau of Science, Publication No. 1*, 1910).—(With Thompson, W. F.) Description of a new species of deep-water sculpin (*Triglopsis ontariensis*) from Lake Ontario, with notes on related species: *U. S. National Museum, Proceedings*, 38; April 1910.—(With Snyder, J. O.) Description of a new whitefish (*Coregonus oregonius*) from McKenzie river, Oregon; *ibid.*, 36; May 1909.—A half century of Darwinism: *Science*, 30; October 1909.—Ichthyology: *American Naturalist*, 43; September 1909.—Kakichi Mitsukuri: *Science*, 30; November 1909.—Nation's need of men; San Francisco, Whitaker & Ray, 1910.—Notes on ichthyology: *American Naturalist*, 44; March 1910.—Permanent wealth of the nation: *Independent*, 68; June 1910.—Religion of a sensible American: Boston, American Unitarian Association, 1909.—(With Richardson, R. E.) A review of the serranidae or sea bass of Japan: *U. S. National Museum, Proceedings*, 37; January 1910.—Scholar in the community: San Francisco, Whitaker & Ray, 1910.—The Story of Matka; a tale of the Mist Islands: San Francisco, Whitaker & Ray, 1910.—Strength of Being Clean: Boston, American Unitarian Association, 1909.—(With others) A system of uniform and common international regulations for the protection and preservation of the food fishes in international boundary waters of the U. S. and Canada; prepared by International Fisheries Commission, [1909].—Universität und "College" in Amerika: *Internationale Wochenschrift für Wissenschaft Kunst u. Technik*, 3; September 1909.—Work of the international fisheries commission of Great Britain and the United States: Paper presented before the Fourth International Fishery Congress, Washington, September 22-26, 1908: *U. S. Bureau of fisheries, Bulletin*, 28; January 1910.
- KELLOGG, VERNON LYMAN: Celebrating Darwin's greatness and Darwinism's weakness: *American Naturalist*, 44; June 1910.—Ernst Haeckel: Darwinist, Monist: *Popular Science Monthly*, 76; February 1910.—In and out of Florence; a new introduction to a well known city, by Max Vernon [pseud.], with many illustrations from drawings by

- Maud Lanktree and from photographs: New York, Holt, 1910.—Insect breeding: *American Breeders' Magazine*, I; June 1910.—(With Paine, J. H.) Mallophaga from the birds of Laysan Island: *Entomological News*, 21; March 1910.—Mallophaga of the Hoatzin: *Zoologica*, 1; January 1910.—Mallophagan parasites from the California condor: *Science*, n. s. 31; January 1910.—The mechanics of biology: *ibid.*, 30; November 1909.—Luigi Bertelli's Prince and his ants; translated from the fourth Italian edition by S. F. Woodruff; edited by V. L. Kellogg: New York, Holt, 1910.
- KREHBIEL, EDWARD BENJAMIN: The interdict, its history and its operation: Washington, *American Historical Association*, 1909. Prize essay of the American Historical Association).—La Société Française au Temps de Philippe-Auguste, par Achille Lucharie (review): *American Historical Review*, 15; January 1910.
- MCCRACKEN, MARY ISABEL: Heredity of the race characters univoltinism and bivoltinism in the silkworm (*Bombyx mori*), a case of non-Mendelian inheritance: *Journal of Experimental Zoology*, 7; November 1909.—The manifestation of the flight function in the silkworm (*Bombyx mori*): *Biological Bulletin*, 18; February 1910.
- MC EWEN, GEORGE FRANCIS: Preliminary report on the hydrographic work carried on by the Marine biological station of San Diego: Berkeley, The University Press, 1910: *University of California Publications in Zoology*, 6; No. 9.
- MARTIN, LILLIEN JANE: Zur lehre von den bewegungsvorstellungen: *Zeitschrift für Psychologie*, 56; 1910.—Also in Bericht über den IV Kongress für Experimentelle Psychologie in Innsbruck, April 1910.
- MARX, GUIDO HUGO: Attendance of students at foreign universities: *Science*, 31; April 1910.—(With Smith, A. W.) Machine Design, third edition; New York, Wiley, 1909.—The problem of the assistant professor: *Proceedings of Association of American Universities*; eleventh annual conference, 1910; also in *Science*, 31; March 18, 25; April 1910.—Some trends in higher education: *California Weekly*, 2; June 1910.—With chart and compass; a commencement address: *Palo Alto*, July 1, 1910.
- MILLIS, H. A.: Chinese immigration, by Mary Roberts Coolidge (review): *American Historical Review*, 15; July 1910.
- MIRRIELES, EDITH: Where the color of life is red: *Sunset*, 23; October 1909.—Justice in Hylo: *Pacific Monthly*, 22; July 1909.—Pay Dirt: *ibid.*, . . . 1909.—The Hate: *ibid.*, 24; July 1910.
- NEWCOMER, ALPHONSO GERALD: On teaching literature: *Dial*, 47; October 1909.—Twelve centuries of English poetry and prose, selected and edited by A. G. Newcomer . . . and A. E. Andrews: Chicago, Scott, Foresman, 1910.—Macaulay's Essays on Clive & Hastings; edited for school use by A. G. Newcomer (Lake English classics): Chicago, Scott, Foresman, 1909.

- PEIRCE, GEORGE JAMES: Botanical aspects of Stanford University: *Plant World*, 12; November 1909.—The possible effect of cement dust on plants: *Science*, 30; November 1909.—What is the use of respiration—*Plant World*, 12; September 1909.
- PONZER, ERNEST W.: The accrediting of High Schools at the University of Illinois: *Sierra Educational News*, 6; June 1910.—Graphs for reference.—Principles of the Calculus and technical courses at the University of Illinois: *Science*, 30; October 1909.
- RICHARDSON, ROBERT EARL: (see under David Starr Jordan).
- ROGERS, AUSTIN F.: Anhydrite and associated minerals from the salt mines of Central Kansas: *American Journal of Science*, 29; March 1910.—The study of rocks without the use of the microscope: *Science*, n. s. 31, 1910.—Notes on some pseudomorphs, petrifications, and alterations: *American Philosophical Society, Proceedings*, 49; 1910.—Minerals from the begmatite veins of Rincon, San Diego county, California: *School of Mines Quarterly*, 31; 1910.
- RYAN, HARRIS JOSEPH: Contribution to the discussion of Corona phenomena in air and oil and their relation to transformer design: *Transactions of the American Institute of Electrical Engineers*, 28, pt. 2; 1909.—Contributions to the discussion of practical method of protecting insulators: *ibid.*, 29; August 1910.—(With Ensign, O. H. and Durand, W. F.) Preliminary report of consulting board of engineers of the Bureau of Los Angeles aqueduct power: Los Angeles, February 1910.
- SHOW, ARLEY BARTHOW: The conflict of religions in the Early Roman Empire, by T. R. Glover (review): *American Historical Review*, 15; January 1910.—The movement for reform in the teaching of religion in the public schools of Saxony: *U. S. Bureau of Education, Bulletin*, No. 1, 1910.
- SKINNER, MACY MILLMORE: Cribbing and the use of printed translations: *School Review*, 18; September 1910.—Der roman, geschichte, theorie und technik des romans und der erzählenden dichtung von Heinrich Keiter und Tony Kellen (review): *Modern Language Notes*, 24; December 1909.—Some practical hints for teaching students how to read German: *School Review*, 17; October 1909.—Vacation loan libraries for students of German: *Monatshefte für Deutsche Sprache und Pädagogik*, vol. 11, No. 4; 1910.
- SLOAN, WILLIAM HENRY: On the conductivity of some concentrated aqueous solutions at zero: *Journal of the American Chemical Society*, 32; 1910.—On the preparation of a cuprous nitrate, $\text{CuNO}_2 \cdot 2\text{NH}_3$: *ibid.*
- SLONAKER, JAMES ROLLIN: Eigenmann's Cave vertebrates of America: (review) *Science*, n. s. 30; December 1909.
- SMITH, JAMES PERRIN: Ancient climates of the West Coast: *Popular Science Monthly*, 77; May 1910.—Salient events in the geologic history of California: *Science*, 30; September 1909.

- STARKS, EDWIN CHAPIN: The Osteology and mutual relationships of the fishes belonging to the family Scombridæ: *Journal of Morphology*, 11; March 1910.—(With Thompson, W. F.) A review of the flounders belonging to the genus *Pleuronichthys*: *Proceedings of the U. S. National Museum*, 38; June 1910.—The scombroid fishes: *Science*, n. s.; October 1909.
- SWAIN, ROBERT ECKLES (with Harkins, W. D.): Arsenic in vegetation exposed to smelter smoke: *Chemical Abstracts*, 3.—(With Bateman, W. G.): The toxicity of thallium salts, first paper: *Journal of Biological Chemistry*, 7; January 1910.
- THOMPSON, WILLIAM FRANCIS: See above under Jordan and Starks.
- TOWNLEY, SIDNEY DEAN: A bright meteor (note): *Astronomical Society of the Pacific, Publications*, 21; December 1909.—The Naval Observatory (note): *ibid.*, 22; February 1910.—The shifting of the earth's axis: *Popular Science Monthly*, 75; November 1909.
- TREAT, PAYSON J.: The Harvard Union: *Stanford Alumnus*, 11; January 1910.
- WHITAKER, ALBERT CONSER: Syllabus of a course of eight lectures delivered . . . during March and April 1909, before the San Francisco chapter of the American Institute of Banking.
- YOUNG, ALLYN A.: California vital statistics: *American Statistical Association, Quarterly Publications*, 11: September 1909.—Report on national vitality, by Irving Fisher (review): *Economic Bulletin*, 3; March 1910.

Appended herewith will be found the special reports of the various department executives and other administrative officers, including the chairman of the principal administrative committees.

Respectfully submitted,

DAVID STARR JORDAN,
President.

December 31, 1910.

APPENDIX I

DEPARTMENTAL REPORTS

GREEK

For the year 1909-10, the department faculty consisted of Augustus T. Murray, professor; Henry W. Rolfe, associate professor; Edward W. Hope, instructor; and Ernest J. Cummings, assistant. Two courses were also given by Professor Henry R. Fairclough, of the Department of Latin.

The following courses were given :

INSTRUCTOR	COURSE	Hours Weekly	Attendance of Students	
			1st Sem.	2nd Sem.
Murray	14	3	...	6
Murray	19	2	4	3
Murray	23	4-6	4	2
Murray*	23b	1-2	9	6
Murray	24	2	4	2
Murray	26	2-3	12	..
Murray	27	2-3	...	15
Fairclough	14	3	7	..
Fairclough	18	2	...	4
Rolfe	7	3	4	..
Rolfe	8	3	...	3
Rolfe	10	2	14	..
Rolfe	12	2	...	9
Hope	1	3	7	6
Hope	3	3	6	3
Hope	17	3	4	..
Hope	13b	2	....	14
			75	73

*A course on Homeric Civilization, given in conjunction with Messrs. Veblen and Rolfe.

During the year the sum of two hundred dollars was sent to the treasurer of the American School of Classical Studies at Athens, and this University has been added to the list of contributing colleges.

AUGUSTUS TABER MURRAY,
Professor of Greek.

LATIN

In 1909-10 the department consisted of Professor H. Rushton Fairclough, Associate Professor Jefferson Elmore, Assistant Professor B. O.

Foster, Instructor P. A. Knowlton, and Assistant Esther J. Spencer. The department also had the coöperation of Professor Henry W. Rolfe of the Greek Department, who gave a two-hour course each semester, and of Professor Hempl of the German Department, who lectured informally two hours a week the second semester to instructors and graduate students on his work in Etruscan. Professor Fairclough coöperated with the Greek Department in a two-hour course for the first semester and a three-hour course for the second. Assistant Professor E. Whitney Martin was absent on leave as Professor of Greek in the University of Nevada.

The following table shows the courses given during the year, and the registration in each:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Spencer	Virgil and Cicero.....	3	5	8
Knowlton	Terence, Cicero and Horace.....	3	10	10
Foster	Terence, Cicero and Horace.....	3	12	6
Knowlton and Fairclough ..	Terence, Cicero and Justinian....	2	24	21
Foster	Prose Composition I.....	2	14	16
Elmore	Horace, Satires and Epistles.....	3	15	..
Elmore	Livy and Tacitus.....	3	..	12
Elmore	Prose Composition II Sallust and Tacitus.....	2	12	9
Foster	Roman Comedy	2	4	..
Elmore	Letters of Cicero.....	2	..	11
Knowlton	Pliny and Seneca.....	2	7	..
Foster	Roman Elegy	2	5	..
Fairclough	Prose Composition III.....	1	7	6
Elmore	Juvenal and Martial.....	2	5	..
Rolfe	Quintilian	2	8	..
Rolfe	History of Roman Literature....	2	..	4
Fairclough	Teachers' Course	2	..	9
Knowlton	Cicero's Philosophical Works....	2	..	5
Foster	Roman Novel	2	..	7
Knowlton	Introductory	3	4	6
Fairclough	Seminary	2-6	5	5
Elmore	Roman Epigrammatists	2	5	7
Fairclough	Introduction to Epigraphy.....	1	5	5
Foster	Oscan and Umbrian.....	2	..	2
Elmore	History of Rome.....	3	..	33
Fairclough	Roman Arts and Monuments.....	2	..	60
Fairclough	Roman Private Life.....	2	36	..
			183	242

In the course of the year 40 major students were registered in the department, of whom 12 were graduates. The degree of Master of

Arts was conferred on Miss Hazel E. Hyatt and Miss Elsie B. Meeks, that of Doctor of Philosophy on Ernest Whitney Martin.

At the end of the second semester, Professor Fairclough left the University on a year's leave of absence, to act as professor in the American School of Classical Studies at Rome. He was also the delegate of the University to the celebration of the hundreth anniversary of the University of Berlin. During the summer quarter he gave lectures at the University of Chicago. Courses in Greek were also given at the summer school of the University of Wisconsin by Instructor Knowlton.

JEFFERSON ELMORE,
Associate Professor of Latin.

GERMAN

The following is a tabular statement of the number of students pursuing the various courses in the department for 1909-10:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cooper, Skinner, Danton, Hilmer	1. Elementary	5	84	81
Hempl, Griffin, Skinner, Boezinger	2a. Second-year Reading	3	133	123
Griffin, Cooper, Danton, Boezinger	2b. Second-year Composition ...	2	73	59
Griffin, Rendtorff	3. Classical Drama	3	53	51
Griffin	4. Modern Drama	2	32	29
Skinner	5. Modern Novel	2	28	23
Hempl	6. Advanced Grammar	2	21	18
Boezinger, Hilmer	7. Composition	2	34	33
Boezinger	8. Advanced Composition	2	24	19
Danton	9. Lessing	3	3	4
Skinner	10. Schiller	3	8	8
Cooper	11. Goethe	3	23	25
Rendtorff	13. Literature	2	17	18
Hempl	14. Teaching	2	..	13
Hempl	15. Old Frisian	2	15	11
Hempl, Rendtorff	23. Thesis Work	2	4	4
			552	519

During the academic year the teaching staff of the German department consisted of George Hempl and James Owen Griffin, professors; Karl G. Rendtorff and William Alpha Cooper, associate professors; Macy Millmore Skinner, assistant professor, and George Henry Danton, acting assistant professor; and Bruno Boezinger and Hermann Hilmer, instructors.

There were registered in the department during the year 94 major students, of whom 9 were graduates and 85 undergraduates. Of the graduate students, 3 were candidates for higher degrees, and at the close of the year the degree of Doctor of Philosophy was conferred upon Bruno Boezinger, and that of Master of Arts, upon Cora Elizabeth Stager and Mary Sherburne Tower.

GEORGE HEMPL,
Professor of Germanic Philology.

ROMANIC LANGUAGES

During the year 1909-10, the faculty of the department consisted of Professor John Ernst Matzke, Associate Professor Oliver Martin Johnston, Assistant Professors Colbert Searles, Clifford Gilmore Allen and Albert Guérard, and Acting Instructors Ernest George Atkin and Robert Edouard Pellissier.

In addition, Mrs. Sophie Boezinger assisted in the correction of French exercises, and Miss Hazel Lorena Michod had general supervision of the phonograph work.

At the end of the year Mr. Atkin and Mr. Pellissier both withdrew from the department in order to continue their studies at Harvard University, where scholarships had been offered to them. In their places Dr. Aurelio Macedonia Espinosa was appointed as Assistant Professor of Spanish. Dr. Espinosa is a graduate of the University of Colorado, '02, and obtained the degree of Ph. D. from Chicago University in 1909.

Finally, I am glad to record the promotion of Assistant Professor Colbert Searles to the rank of Associate Professor in the department.

The following table gives an idea of the courses given, with the attendance during either semester.

The number of major students registered in the department was 40; of this number 2 were recommended for the degree of A. B.

JOHN ERNST MATZKE,
Professor of Romanic Languages.

INSTRUCTOR	COURSE	No. of Sections	Unit Hours	Attendance	
				1st Sem.	2nd Sem.
Johnston, Allen, Pellissier ...	1a. Elementary French ...	3	3	100	81
Searles	1b. Elementary French, Reading Course	1	3	23	22
Searles, John- ston	2. Second-year French Composition	2	2	24	12
Searles, Guér- ard, Johnston	3. Modern French Reading	3	2	81	68
Guérard	4a. French Conversation .	1	3	18	15
Searles	4b. French Pronunciation .	1	1	13	9
Guérard	5. Reading and Writing of French	1	3	18	15
Guérard	6. Advanced French Prose Composition	1	2	9	11
Searles	7. Outline Course in the History of French Literature	1	3	21	12
Johnston	8. Classical French	1	3	20	20
Matzke	9. History of French Lit- erature in the Nine- teenth Century	1	2	7	6
Guérard	10. French Lyric Poetry in the Nineteenth Cen- tury	1	2	8	...
Guérard	11. Augier	1	2	...	7
Allen, Atkin ..	12. Elementary Spanish ...	3	3	156	97
Allen	13. Second-year Spanish Composition	1	2	23	17
Atkin	14. Modern Spanish Read- ing	1	2	35	28
Allen	15a. Spanish Conversation.	1	1	4	2
Allen	15b. Spanish Pronunciation	1	2	18	14
Allen	16. Advanced Spanish Com- position	1	2	18	14
Allen	18. Outline Course in the History of Spanish Literature	1	2	7	7
Johnston	19. Elementary Italian....	1	3	13	9
Johnston	21. Dante and the Divine Comedy	1	2	...	56
Matzke	22. Phonetics	1	3	5	...
Matzke	23. Teachers' Course in French	1	1	...	5
Matzke	24. Boileau	1	3	3	...
Matzke	25. Racine	1	3	...	4
Matzke	26. The Roman d'Aventure	1	2	2	2
				608	519

ENGLISH LITERATURE AND RHETORIC

The faculty of the department consisted of Professors Melville Best Anderson and Alphonso Gerald Newcomer; Associate Professor Raymond MacDonald Alden; Assistant Professors Samuel Swayze Seward, Jr., Howard Judson Hall, Lee Emerson Bassett, Henry David Gray, and William Dinsmore Briggs; Instructors John Kester Bonnell and Theresa Peet Russell, and Assistants Edith R. Mirrielees (Acting Instructor), Alice W. Kimball, Italia E. Flaus and Lillie M. Ribbe.

At the close of the academic year, in May, Dr. Melville Best Anderson resigned his chair, withdrawing under the provisions of the Carnegie Foundation that he might continue uninterrupted his work in the translation of Dante. Professor Anderson assumed charge of the Department of English at the opening of the University in 1891, and continued in that position for fifteen years. In 1906 he laid aside his administrative duties, but remained as senior professor and adviser, carrying his full share of academic work. In establishing the policies of the department and shaping its ideals his influence has been both wide and deep, and the loss which by his withdrawal the University suffers on the side of pure humanism is one that cannot be easily repaired.

For the ensuing year Mr. Everett Wallace Smith, A. B. (Stanford, 1899), has been appointed Instructor in English. Mr. Smith has been engaged in journalism, holding for the last three years an editorial position in the Forest Service at Washington, D. C. His special work here will be the conduct of classes in composition looking toward news and editorial writing.

Leaves of absence for the ensuing year were granted to Professors Seward and Hall, who have been in residence ten and six years respectively.

Doctor Alden conducted courses in English literature at the University of Chicago during the first term of the summer quarter (1910), and Doctor Gray conducted courses at the summer session of the University of Oregon.

The number of major students registered in the department was 149, of whom 1 was a special student, and 17 were graduates. Thirty students were given the degree of A. B., and 3 the degree of A. M.

Following is a table of the courses given, with the enrollment in each. In addition to these, Dr. Briggs gave two courses in the Department of English Philology.

ALPHONSO GERALD NEWCOMER,
Professor of English.

INSTRUCTOR	COURSE	Unit Hours	Enrollment	
			1st Sem.	2nd Sem.
Bonnell, Hall, Mirrielees ..	A. Elementary Composition	1	140	92
Bassett, Bon- nell	1. Vocal Expression	3	84	81
Briggs, Gray, Russell	2. Composition	2	140	129
Mirrielees, Newcomer, Seward	2A. Narration and Description..	2	32	59
Seward	2B. Exposition	2	30	33
Seward	3. Note-taking	1	52	41
Newcomer	4. Modern English	1	...	86
Newcomer, Russell	5. Elementary Classics	3	85	80
Alden	6. Introduction to Poetry	3	...	56
Bassett, Hall, Newcomer, Seward	6A. Tennyson	3	59	29
Alden	10. Shakspeare	2	36	37
Bassett	10A. Shakspeare	3	...	54
Bassett, Bon- nell	14. Vocal Interpretation	2	25	16
Hall, Russell ..	15. Public Speaking	2	11	23
Seward	21. Advanced Composition	2	40	30
Alden, Briggs ..	22. Advanced Narration	1	12	...
Alden, Bassett ..	24. Argument	3	47	...
Seward	25. Oral Debate	2	10	14
Alden	28. Teacher's English	3	20	21
Hall	30. Survey English Literature...	2	...	18
Alden	32B. History of English Litera- ture	3	...	36
Seward	32A. 18th Century Literature...	3	43	...
Seward	34A. Victorian Prose	2	26	...
Briggs	34B. Victorian Poetry	2	...	16
Russell	35. English Fiction	2	10	5
Gray	36. Satire	2	...	26
Briggs	38. Modern Drama	3	...	63
Newcomer	41. Spenser	3	...	11
Anderson	43. Wordsworth, etc.	3	37	...
Alden	44. Browning	2	72	60
Anderson	53. Lyric	2	13	...
Anderson	54. Comparative Literature	3	11	...
Anderson	55. Shakspeare	3	...	16
			1035	1131

ENGLISH PHILOLOGY

During the academic year 1909-10 Dr. William Dinsmore Briggs, of the Department of English Literature and Rhetoric, conducted the elementary course in Old English, and, as before, I wish to express my obligations to him for his faithful and successful assistance, which has enabled me to concentrate more energy on the advanced work of the department.

The most important work of the department was the research course, which was particularly intended to give to the future teachers of English some practice in the independent working out of fresh material in the line of philological investigation. The term "Philology" was taken in its fullest and broadest sense. The work during the first semester was devoted to a continuation of the topic selected for the academic year 1908-9, viz., a critical examination of the methods of recent historians of English Literature; the second semester was devoted to special studies in English word history and terminology.

The following is a list of the courses given during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Briggs	1. Old English	3	22	..
Flügel	2. Chaucer (elementary)	2	39	..
Flügel	3. History Early English Literature	3	32	..
Flügel	7. Middle English Grammar	2	10	..
Flügel	11. Research	2	6	10
Flügel	4. Middle English Exercises	3	..	9
Flügel	8. Chaucer (advanced)	2	..	32
Flügel	9. Ballads	2	..	14
			109	65

EWALD FLÜGEL,
Professor of English Philology.

PHILOSOPHY

The members of the Department for 1909-10 were Dr. Henry W. Stuart, professor; Dr. George H. Sabine, assistant professor, and Mr. John M. Fletcher, assistant. The courses given were as follows:

INSTRUCTOR	SUBJECT	Credit Value	Registration	
			1st Sem.	2nd Sem.
Stuart,				
Sabine	1. Elementary Logic	3	50	...
Stuart	2. Elementary Ethics	3	20	...
Sabine	3. History of Philosophy.....	3	13	12
Sabine	4. Philosophy of XIX Century..	3	2	...
Sabine	5. Philos. in XIX Cent. Life....	3	...	14
Stuart	6. Advanced Logic	3	...	30
Sabine	8. Hist. and Appl. of Evol.....	2	...	14
Stuart	9. Problems of Mod. Philos.....	2, 3	1	4
Sabine,				
Stuart	10. Special Work	2, 1	1	1
			87	75

During the second semester, Dr. Sabine received a call to Cornell University for the year 1910-11, to supply in the Sage School of Philosophy in the absence of Professor J. E. Creighton. Leave of absence was granted Dr. Sabine for this purpose. Dr. Addison W. Moore, Professor of Philosophy in the University of Chicago, was engaged for the second semester of 1910-11, to conduct the historical courses of the Department.

HENRY WALDGRAVE STUART,
Professor of Philosophy.

PSYCHOLOGY

The courses of instruction given and the attendance in each course are tabulated below:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Angell	1. General Psychology	4	109	..
Martin, Angell.	2. Beginners' Laboratory	3	20	20
Angell	3. Evidence	2	..	29
Angell, Martin.	4. Advanced Laboratory	3	5	4
Martin	6. Applied Psychology	2 or 3	..	67
Martin	6a. Abnormal Psychology	2 or 3	32	..
Angell, Martin.	9. Research	Varying	3	3
			169	123

The faculty of the Department for the academic year 1909-1910 consisted of Frank Angell, professor, Lillian Jane Martin, associate professor, and Paul R. Radosavljevich, student assistant.

During the summer Professor Martin was abroad working on the subject of motor images.

The course in beginners' laboratory work now contains as many students as it is possible to take with the present facilities for instruction. The larger lecture courses are still problems of efficient instruction.

FRANK ANGELL,
Professor of Psychology.

EDUCATION

The following is the record of attendance in the several courses offered by the Department during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cubberley	1. Public Education in America	2	158	..
Davidson	2. Educational Theory—Intro- ductory	2	..	146
Cubberley	3. History of Education in Europe	3	37	44
Bentley	5. Educational Psychology	3	..	37
Bergström	6. Secondary Education	2	77	..
Bentley	6. Secondary Education	2	..	63
Cubberley	10. State School Administration.	3	13	17
Bergström	12. Foreign School Systems	3	10	..
Davidson	13. Logic of Education	2	19	15
Davidson	14. Social Phases of Education..	2	15	..
Davidson	16. Educational Theory—Advan- ced Course	2	8	5
Davidson	17. The Curriculum (Saturday morning course)	2	19	27
Dailey	18. Training of Teachers	1	..	12
Bergström	19. Pedagogical Seminary	2	5	..
Bentley	19. Pedagogical Seminary	2	..	5
Bergström	20. Thesis Work	1	1	..
Cubberley	21. Special Courses	2-3	6	4
Evenden	22. Practice Teaching	4	20	11
Evenden	22a. Method and Management of Instr.	1	..	4
Cubberley	23. Journal Club	½	27	27
			415	417

The work of the Department was carried on during the year 1909-10 by the following staff: Ellwood Patterson Cubberley, professor; John Andrew Bergström, professor (died February 28, 1910); Percy Erwin Davidson, assistant professor; Rufus Clarence Bentley, assistant professor; Morris Elmer Dailey, lecturer; and Frances Elizabeth Short and Edward Samuel Evenden, assistants. Professor Bentley was here only the second semester.

The serious affliction from which Professor Bergström suffered, and which finally caused his death, made it necessary for him to give up his classes late in October, and temporary arrangements had to be made to complete the semester. Each of his courses contained one of our advanced students, and to these was entrusted the work of carrying the classes along to the end of the semester along the lines which Dr. Bergström had followed. Mr. Edward S. Evenden carried the course in Secondary Education to a successful completion, as did Mr. Albert Cobert the course in Foreign Schools and Mr. Arthur Heche the work of the Pedagogical Seminary.

For the second semester Mr. Rufus Clarence Bentley, formerly Dean of Clark College, was obtained as lecturer and as a temporary supply, though it was later decided to appoint him as an assistant professor and retain him. During the second semester he continued the courses Professor Bergström had started, and along the lines he had marked out.

Mr. Evenden received a temporary appointment as assistant to oversee the work of Practice Teaching, which had, in the pressure of other work, been rather neglected. He has given good service, and has been continued in the work for the coming year.

ELLWOOD P. CUBBERLEY,
Professor of Education.

HISTORY

The faculty of the department for the year 1909-1910 consisted of Professors Ephraim Douglass Adams, Arley Barthlow Show, and Herbert Eugene Bolton; Associate Professor Edward Benjamin Krehbiel; Assistant Professor Payson Jackson Treat; and Instructors Percy Alvin Martin and Sedley Lynch Ware.

Assistant Professor Henry Lewin Cannon was absent on leave throughout the year, spending most of his time in study and research at the Public Record Office in London, his place being temporarily taken by Dr. Ware, who rendered excellent service. It was hoped that the services of Mr. Ware might be retained to fill the vacancy in American Colonial History, the one serious gap now remaining in the work of the department. Dr. Ware has since accepted an instructorship in History in the University of Wisconsin.

The following is a list of the courses given in 1909-1910, with hours of credit and attendance for each semester.

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Martin	1. Training	1	49	37
Show	3a. Middle Ages	3	64	
	3b. Middle Ages			95
Ware	4a. English History	3	161	
	4b. English History			165
Krehbiel	5a. European History	2	96	
	5b. European History			112
Adams	7. United States History	2	92	104
Bolton	8. Westward Movement	3	45	49
Treat	9. The Far East	3	111	121
Martin	12. History of Germany	3	30	31
Martin	12a. History of France	2	17	11
Show	13a. The Ancient Church	2	11	
Show	13b. The Mediaeval Church	2		10
Krehbiel	15a. French Rev. and Napoleon ..	2	21	
Krehbiel	15b. European 19th Century	2		41
Show	16. Teachers' Course	2		29
Adams	18. Eng. and Am. in Civil War ..	3	14	11
Bolton	19. Anglo-Saxon Southwest	2	8	11
Treat	21. Tropical Colonization	2	6	
Treat	22. History of Australasia	2		26
Show	27. Painting of Renaissance	1	4	3
Bolton	28. Spanish Southwest	2	5	4
Martin	30. Renaissance in Italy	2	6	6
Adams	31. American Diplomatic History ..	2	13	10
Krehbiel	32. Spread of Protestantism	2	6	6
Adams	35. American-European Relations ..	2	3	3
Treat	36. Philippines under Spain	2	1	
Ware	37. U. S. Const. History	2	7	5
	Thesis	Vari- ous	6	6
			774	894

Some years ago Dr. J. C. Branner called the attention of the History Department to the existence at Santa Cruz of a rare collection of contemporary pamphlets relating to the French Revolution. These had been gathered by the late John R. Jarboe, a lawyer of San Francisco. Various efforts were made to interest the family of Mr. Jarboe in a plan for disposing of this material to Stanford University, but without success until the present year, when the matter was turned over by the department to Professor E. B. Krehbiel, as of especial interest to his field of work. As a result of his energy, and of the sympathetic interest of Mr. Timothy Hopkins of the Board of Trustees, a committee of the faculty,

consisting of Librarian G. T. Clark, and Professors Matzke, Guérard, Krehbiel, and Adams, was able to make a careful examination of the collection, and to recommend its purchase for the Library. The Board of Trustees approved the purchase, and the collection is now being catalogued. In addition to the valuable pamphlet source material, it contains many rare and beautiful books, some twenty-five hundred titles in all, and will be of great profit to the students of many departments.

Among fields of historical work peculiarly suited to the location of Stanford University, is that of the history of the countries of the Pacific Ocean. Through the generosity of Mr. Thomas Welton Stanford, of Melbourne, Australia, a large collection of books on Australia, bearing on all topics relating to that country, was some years ago presented to the Library. It constitutes the best Australian collection in America. The Library is weak, however, in works on other countries in the field.

In 1906-1907, Mr. H. C. Hoover, Stanford '95, gave \$1,000, and Mr. D. C. Mitchell, Stanford '96, \$250, to aid in filling this gap. This fund has been very judiciously expended under the direction of Professor Treat, the instructor in charge of the work, but the gift is now exhausted and the field is so large that further gifts or appropriations for it will be gladly welcomed.

The publications of members of the department for the year July 1909 to July 1910 will be found under another head. The number of graduate students enrolled in the department for the year was sixteen, of whom one received the degree of Doctor of Philosophy, and four the degree of Master of Arts, at the annual commencement in May.

EPHRAIM DOUGLASS ADAMS,
Professor of History.

ECONOMICS AND SOCIAL SCIENCE

The work of the department for the year 1909-10 was carried on by Professors Allyn Abbott Young and Burt Estes Howard, Associate Professors Thorstein Veblen (present during the first semester) and Albert Conser Whitaker, Assistant Professors Harry Alvin Millis (present during the second semester) and James Marvin Motley, and Acting Instructor Ira Brown Cross.

In the spring of 1910 Assistant Professors Millis and Motley were promoted to the rank of Associate Professors. During the first semester of 1909-10, Professor Millis was absent on leave in order that he might continue his work as Superintendent of Agents of the Western Division in the investigations carried on by the United States Immigration Commission. Associate Professor Veblen resigned at the end of the first semester of 1909-10. At the end of the year Associate Professor Motley resigned in order to take a position at Brown University. Professor

Young has taken a leave of absence for the year 1910-11 in order to accept a position in Harvard University for the year.

The courses given and attendance were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Young, Cross..	1. Elements of Economics	3	303	242
Millis	2. Principles of Economics.....	2	..	12
Whitaker	4. Money and Banking.....	3	19	15
Young	5. Railway Transportation	3	50	..
Whitaker	6. Corporations and Trusts.....	2	51	35
Millis	10. Labor Problems	3	..	36
Motley	11. Labor Legislation	2	28	21
Motley	12. Social Economics	3	54	44
Cross	13. Socialism	3	39	..
Cross	14. Economic History	3	..	7
Veblen	16. History of Pol. Econ.....	3	4	..
Young	16. History of Pol. Econ.....	3	..	9
Whitaker	17. Value and Income.....	2	4	4
Motley	18. Seminar in Soc. Sc.	2	8	6
Veblen	19. Economic Factors in Civiliza- tion	3	3	..
Young	21. Seminar in Finance	2	10	7
Millis	26a. Seminar in Immigration Problems	2	..	4
Young	Thesis	2	1	..
Veblen	Thesis	5	1	..
POLITICAL SCIENCE				
Howard	30. Comparative Fed. Governm't	3	18	19
Howard	31. American Politics	3	61	..
Howard	32. Municipal Government	3	..	127
Howard	34. Seminar in Polit. Sc.	2	7	26
			661	614

The number of major students registered during the year was 157, consisting of 13 graduates, 132 regular undergraduates, and 12 special students.

ALBERT CONSER WHITAKER,
Associate Professor of Economics.

LAW

The faculty of Law for the year 1909-10 consisted of Professors Fred-eric Campbell Woodward, Arthur Martin Cathcart, and Wesley Newcomb

Hohfeld, Acting Professor Howard Leslie Smith, and Associate Professors Charles Andrews Huston and Joseph Walter Bingham. Professor Charles Henry Huberich spent the year at the law school of the University of Wisconsin, in exchange for Professor Smith. The course in California Practice was again given by John Slater Partridge, Esq., of the San Francisco bar.

The registration of students in the Law School was 86, of whom 26 were graduate students, 36 seniors in the pre-legal course, and 24 special students. The registration of students in the pre-legal course, excluding seniors who are counted as students in the Law School, was 189.

The courses of instruction given, and the enrollment in each, were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Huston	1. Introduction to Law.....	2	...	85
Smith	2. Crimes	4	39	...
Smith	3. Constitutional Law	3-3	20	17
Huston	5. Municipal Corporations	2	...	6
Smith	7. Conflict of Laws.....	4	...	8
Woodward	10. Persons	2	33	...
Bingham	11. Introduction to Property.....	3-3	39	31
Bingham	13. Wills	4	16	...
Bingham	16. Water Rights	2	...	10
Bingham	17. Mining Law	2	...	4
Cathcart	18. Torts	5	49	...
Woodward	19. Contracts	4-3	67	59
Huston	21. Agency	4	...	36
Woodward	23. Sales	4	...	11
Huston	25. Corporations	4	7	...
Cathcart	26. Common Carriers and Public Service Corporations	3	...	7
Huston	27. Insurance	3	15	...
Hohfeld	31. Equity I	4	...	38
Hohfeld	32. Trusts	2-2	17	12
Cathcart	34. Damages	2	...	15
Cathcart	35. Common Law Pleading.....	2	24	...
Cathcart	36. Equity Pleading	1	22	...
Cathcart	37. Code Pleading	2	...	20
Hohfeld	38. Evidence	3-3	10	6
Partridge	39. California Practice	2	...	10
			358	375

The total number of volumes in the Law library on August 1, 1909, was 13,502. During the period from August 1, 1909, to July 31, 1910, 950 volumes were added. Of these, 835 were acquired by purchase, 22 by gift, and 93 by binding. The total number of bound volumes in the Law library

on August 1, 1910, was 14,452. During the year the consolidated statutes of a number of states were purchased. The completion of this collection, the acquisition of the session laws of the various states, and the continuation to date of the official reports of all American courts of last resort, are the most immediate needs of the library. As I reported last year, there is also urgent need of a librarian who can devote all of his time to the care and conservation of the library, the completion of an adequate card-catalogue, and the conduct of negotiations for the purchase of books.

FREDERIC CAMPBELL WOODWARD,

Professor of Law.

GRAPHIC ART

The personnel of the department faculty was as follows:

Arthur Bridgman Clark, associate professor; Robert Barthlow Harshe, assistant professor; Mrs. Chloe Leslie Starks, instructor; and Miss Harriet Park, assistant.

During the year the following courses of instruction were given:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Starks	1. Elementary Still-life	2-4	23	18
Harshe	2. Casts, Antique	2-5	10	18
Harshe	3. Head, from Life	2-5	9	12
Harshe	4. Color	2-5	5	6
Clark	5. Landscape	3	9	19
Clark	6. Lectures	2	32	41
Starks	9. Science Illustration	2	2	3
Harshe	10. Teachers' Course	3	...	21
Clark	11. Design	3-5	33	20
Harshe	12. Illustration	2-5	6	10
Harshe	13. Handicraft	2	8	9
			137	177

Several photographs of standard works of art were obtained through personal selection abroad during the summer vacation. These will assist the lecture work in this field very materially.

The working rooms of the department have been over-crowded during the year, the limit of capacity being reached in the majority of classes. The lecture work has been possible through the courtesy of the Department of Physics, which has permitted the use of its room equipped with a reflectoscope. The course for intending teachers of art was given this year with marked success by Assistant Professor Harshe.

Exhibitions arranged during the year under the auspices of the Art Club were as formerly of marked excellence. They comprised the following:

Drawings by the students of the Art Institute of Chicago.

Original drawings used in magazine illustration by Messrs. John R. Boyd, J. S. L. Williams, Harold McCormick, and Carlton T. Chapman.

Paintings, Landscape and Portraits, by Robert Barthlow Harshe.

Drawings by E. H. Blashfield.

Etchings by Joseph Pennell.

Professor Harshe has continued to produce a good number of paintings of local subjects and to exhibit them in various galleries.

ARTHUR BRIDGMAN CLARK,
Associate Professor of Graphic Art.

MATHEMATICS

The personnel of the department faculty was as follows: Robert Edgar Allardice, professor; Rufus Lot Green, professor; Hans Frederick Blichfeldt, associate professor.

The courses given were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Blichfeldt	1. Trigonometry	2	39	2
Blichfeldt	2. Solid Geometry	2	...	24
Green	3. Algebra	5	56	...
Green	5. Coord. Geometry	5	...	19
Allardice	6. Plane Geometry	2	13	9
Blichfeldt	7. General Course	3	24	20
Allardice	9. Calculus	3	16	17
Green	10. Advanced Coord. Geometry...	2	8	10
Allardice	11. Adv. Calculus	3	4	...
Blichfeldt	13. Non-Euclidian Geom.	2	...	4
Green	14. Theory of Equations.....	3	2	2
Blichfeldt	15. Diff. Equations	3	3	...
Allardice	16. Theory of Functions.....	3	...	4
Allardice	17. Adv. Theory of Functions....	4	1	1
Allardice	21. Projective Geometry	2	6	7
			172	119

ROBERT EDGAR ALLARDICE,
Professor of Mathematics.

APPLIED MATHEMATICS

The active teaching force of the department for the year 1909-10 consisted of the following persons: Professor Leander Miller Hoskins, Associate Professors Halcott Cadwalader Moreno and Sidney Dean Townley; Acting Assistant Professor E. W. Ponzer, and Instructor Jesse Dwight Suter. Assistant Professor William Albert Manning spent the year at the University of Illinois, in exchange with Mr. Ponzer. During the year the following assistants were employed: H. C. Burbridge, A. E. Caswell, G. Costar, L. M. Edwards, E. Jordan, W. N. Lacey, G. F. McEwen, A. E. Smothers, A. F. Taggart, R. P. Webb, R. N. Wooster.

The courses of instruction given, with the attendance in each, are shown in the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Suter	A. Solid Geometry	2	26	...
Suter	B. Trigonometry	3	...	40
Moreno, Suter, Ponzer	1. First-year Mathematics	5	116	100
Townley, Suter, Ponzer, Hos- kins	2. Calculus	3	115	84
Hoskins, More- no, Townley	3. Theoretical Mechanics	5	103	84
Townley	4. Adjustment of Observations..	2	...	14
Townley	5. General Astronomy	3	32	...
Townley	5a. Practical Astronomy	3	...	15
Moreno	6. Graduate course	2	2	...
Moreno	7. Graduate course	2	...	2
Hoskins	*3a. Hydraulics	3	...	82
Hoskins	*3b. Hydraulic Motors	3	49	...
			443	430

*Scheduled under Engineering.

LEANDER MILLER HOSKINS,
Executive Head.

PHYSICS

The faculty of the Physics Department for the year 1909-10 consisted of Professor Fernando Sanford, Associate Professor Frederick John Rogers, Assistant Professors Elmer Reginald Drew and Joseph Grant Brown, and Laboratory Assistants Shirley Hyatt, George Francis McEwen, Perley Ason Ross and Albert Edward Caswell.

Report of the President

39

The courses given in the department during the year, with the attendance in each class, are given below:

INSTRUCTOR	COURSE	Lecture Units per Week		Lab. Units per Week		Attendance	
						1st Sem.	2nd Sem.
Brown, Hyatt, McEwen ...	1. Dynamics	1	1	4	4	48	32
Drew, Hyatt ..	2. Elec. & Mag. ....	..	1	..	3	..	29
Sanford, Ross..	3. Heat .....	..	1	..	2	..	14
Brown	4. Sound	1	..	2	..	4	..
Sanford	5. El. Optics .....	..	..	3	..	2	..
Drew, Caswell.	6a. Engineering Phys...	3	..	3	..	39	..
Rogers, Caswell	6b. Engineering Phys...	..	3	..	3	..	31
Sanford, Ross.	7a. Phys. for Medicine.	2	..	2	..	20	..
Sanford, Hyatt, Rogers, Cas- well	7b. Phys. for Medicine.	..	2	..	2	..	13
Rogers, McEwen	9. Electrical Measure- ments	1	..	3	..	20	..
Sanford	10. Adv. Optics .....	..	..	4	4	2	1
Sanford	11. Gen. Physics	4	4	..	..	2	2
Drew, McEwen, Caswell	12. Anal. Mechanics ....	..	4	..	..	..	3
Sanford	13. Teachers' Phys.	1	1	..	..	3	3
Rogers	16. Gas Theory .....	..	2	..	..	..	3
Rogers, Drew..	18. Electrical Theory ..	3	3	..	..	4	3
Sanford	19. Investigation .....	..	..	..	..	3	5
Sanford	Theory of Electricity	..	1	..	..	..	5
						147	144

FERNANDO SANFORD,

Professor of Physics.

CHEMISTRY

The teaching staff in the Department of Chemistry for the year 1909-10 consisted of Professors John Maxson Stillman, Lionel Remond Lenox, Edward Curtis Franklin, Stewart Woodford Young; Assistant Professor John Pearce Mitchell; Instructors William Henry Sloan, William George Bateman, George DeForest Barnett; Acting Instructor Fred Finlay Fitzgerald; Student Assistants Robert W. Poindexter (second semester), Ernst H. Staber (first semester), George S. Bohart, Thornton Mills Hopler (first semester), Eloise Jameson, Elmer Rupel Weaver, Ralph Edward Sanborn (second semester), Thomas Meredith Cramer, Harry Johnson Sears (second semester).

Associate Professor Robert Eckles Swain was absent on leave during the past year, engaged in special studies in Europe and in Yale University. His courses in Toxicology and in Organic Chemistry for medical students, were conducted in the second semester by Mr. Fitzgerald, and his courses in Physiological Chemistry were suspended for the year.

Instructor W. G. Bateman resigned at the end of the first semester, having accepted a professorship at the Imperial Chinese University at Tientsin. Instructor George DeF. Barnett resigned at the end of the year, to pursue the study of medicine.

For the ensuing year, Mr. Thomas B. Hine (Stanford, '10) and Mr. Paul H. Waldruff (Stanford '10) have been appointed in place of Instructors Bateman and Barnett respectively.

The courses in Chemistry during the year 1909-10, and the attendance upon them, were as follows:

LECTURE COURSES

INSTRUCTOR	COURSE	Units per Week		Attendance	
		1st Sem.	2nd Sem.	1st Sem.	2nd Sem.
Mitchell	*1. General Inorganic	2	2	154	120
Mitchell	*1. General Inorganic	3	2	46	46
Stillman	*2. Principles	3	3	24	17
Franklin	*3. Organic	2	2	17	16
Stillman	*4. Industrial	2	2	15	17
Stillman	†5. History of Chemistry	2	..	11	..
Lenox	†6. Qualitative Analysis ..	1	1	31	44
Young	*8. Physical Chemistry ...	3	3	7	5
Franklin	†12. Seminary	1	1	8	10
Young	†10. Theories of Analytical	..	1	..	14
Stillman	†x. Special Reading .....	..	2	..	2
Fitzgerald	†Med. 1. Organic .....	..	3	..	12
				313	303

All laboratory courses arranged to be completed in one semester.

In addition to registrations above given, fourteen students occupied desks for making up work previously registered, but incomplete.

Of the 274 students occupying laboratory desks during the year, the distribution according to their major subjects is as follows:

Chemistry 69, Geology and Mining 59, Physiology 34, Medicine 13, Electrical Engineering 33, Mechanical Engineering 19, Civil Engineering 14, Pre-Legal 10, Economics 7, Botany (General and Systematic) 5, Physics 2, Zoology 4, Entomology 1, Psychology 1, Mathematics 1, Greek 1, German 1.

*Courses continuing throughout the year.

†Courses complete in each or either semester.

LABORATORY COURSES

INSTRUCTORS	COURSE	Unit Hours per Sem.	Attendance	
			1st Sem.	2nd Sem.
Mitchell, Bar- nett, Hopler and assistants	AI. General Inorganic	2	43	...
Cramer, Sears	AII. General Inorganic	2	86	59
Lenox, Bateman (Poindexter)	b. Qualitative Analysis	3	31	44
Franklin, Bo- hart	c. Organic preparations	3	6	10
Sloan	d. Quantitative Analysis	3-4	21	16
Lenox, Sloan..	e. Mineral Analysis	3-4	8	8
Young, Jame- son	f. Physical Chemistry	3-5	4	...
Lenox, Staber, Sanborn.....	h. Assaying	3-4	13	16
Fitzgerald	Toxicology	3	...	14
Stillman	x. Advanced, Special or Research	3-5	3	1
Lenox	x. Advanced, Special or Research	3-5	1	...
Franklin	x. Advanced, Special or Research	2-5	2	6
Young	x. Advanced, Special or Research	3-5	1	2
			219	176

These figures do not include students who may have been in attendance upon lecture courses without occupying laboratory desks, but will serve to illustrate adequately the extent to which the laboratories of chemistry contribute to the training of various classes of students. Comparison of the above figures may be made with more detailed statistics published in the Report of the President for the year ending July 31, 1905. The general relations do not differ materially from those above given.

Lectures were also given without separate registration, as supplementary to laboratory courses, by Professor Lenox, one hour per week each semester on Assaying; and by Instructor Sloan, one hour per week each semester on Quantitative Analysis.

Work of research character carried on during the year was as follows:

Professor Franklin completed measurements on the electrical conductivity of concentrated solutions in liquid sulphur dioxide at varying temperatures and prepared potassium ammonio-plumbite, an important representation of the class of ammonio-salts. This work will soon be published.

Professor Young has extended his researches in the field of super-cooled and super-saturated liquids, having especially investigated the influence of mechanical impact in inducing crystallization in such systems. This work will shortly be published.

During the past summer months, Professor Swain acted as special agent of the Government in the investigation of the effects of smelter smoke on vegetation. Dr. Mitchell of this department and Professor Peirce of the Botany department were associated in the same investigation. Professor Swain has also been intrusted by the Board of Consulting Scientific Experts of the Government with the conduct through the coming semester of an investigation of the effects of the use of sulphured fruit in the human organism. This is an extension of the general investigation begun a year ago under direction of the Board. The expenses of the investigation will be supported by the Government. Assistant Professor Mitchell continued his work in the methods of water analysis. In collaboration with Professor Peirce of the Department of Botany, he was also engaged in a study of the effects of definite concentrations of sulphur dioxide on various living plants. This work is unfinished, and will be continued during the coming year.

Instructor Sloan was engaged in the analysis of certain mineral waters of the state. Results of the analysis will soon appear in a bulletin of the United States Geological Survey, and will later appear with discussion of methods as a separate paper, in the Chemical Journal.

Mr. F. F. Fitzgerald, acting instructor, and candidate for the degree of Doctor of Philosophy, completed his work on the electrical conductivity of methylamine and ethylamine, and on the viscosity of solutions in ammonium, methylamine and sulphur dioxide. This work was under the direction of Professor Franklin.

Miss Eloise Jameson completed a study of the zinc ammonium sulphates, with special reference to their use as standardizing reagents. This work, carried on under direction of Professor Young, will soon be published.

Mr. W. D. Forbes, candidate for degree of A. M., was engaged in analyses of certain mineral springs of this vicinity, under supervision of Professor Stillman. Mr. T. B. Hine was engaged, under direction of Professor Franklin, in a study of the action of potassium-amide on thallium nitrate in solution in liquid ammonia.

Mr. G. S. Bohart investigated, under Professor Franklin's direction, the action of ammonia solutions of potassium-amide on cadmium iodide and nickel iodide.

JOHN MAXSON STILLMAN,
Professor of Chemistry.

GENERAL BOTANY

The personnel of the department for the academic year 1909-10 was as follows: Professor Douglass Houghton Campbell, Associate Professor (now Professor) George James Peirce, Assistant Professor Leonas Lancelot Burlingame, and Samuel Hash Sherfy, assistant.

The courses given by the department and the attendance on them is indicated by the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Campbell, Peirce, Burlingame.	1. Elementary	3-3½	59	50
Campbell	2. Algae	5	3	...
Campbell	3. Archegoniatae	5	...	3
Peirce	5. Physiology	3	6	...
Peirce	7. Physiology	1	23	...
Peirce	9. Physiology	3	...	7
Burlingame....	10. Technique	3	5	...
Campbell, Peirce	12. Investigation	2-5	1	2
			97	62

With the exception of courses 7 and 8, all courses in this department are laboratory courses with one lecture a week.

The members of the department were assisted during the first semester in caring for the unusually large number in Botany by Charles Shoemaker Morris, a graduate of this University, now teacher of Biology in the Palo Alto High School.

The following studies have been pursued during the year:

Professor Campbell has made further studies of the development of the Screw-pine (*Pandanus*) and a paper on the embryo-sac of *Pandanus coronatus* was published in the Bulletin of the Torrey Botanical Club. A paper on the embryo and young sporophytes of *Angiopteris* and *Kaulfussia*—two ferns of the eastern tropics—was prepared for a volume recently published in honor of Professor Treub, the retiring Director of the Department of Agriculture of the Netherlands Indies. An extensive monograph of two families of ferns, the *Marattiaceae* and the *Ophioglossaceae*, has been completed and is now on the press of the Carnegie Institution of Washington.

Professor Peirce has carried on his experimental investigation of the liberation of heat in respiration, using the constant temperature

chambers and the calorimeters described in preceding reports. The Carnegie Institution of Washington has aided in the study of the peculiar organisms of the salt pools on the shore of the Bay of San Francisco. The Forest Service of the United States has furnished material for the experimental study of the effects of smoke on vegetation, which has been going on for the last few years in cooperation with Professors Swain and Mitchell of the Department of Chemistry.

Assistant Professor Burlingame has continued his investigation of the morphology and the cytology of *Podocarpus*, and will be ready to publish his results shortly. In the garden of Mr. James Flood of Menlo Park there are remarkably fine specimens of *Araucaria* from which, through Mr. Flood's courtesy, Mr. Burlingame is obtaining material which will enable him to complete a study of these plants, which elsewhere fruit rarely so far north.

In addition to the coöperation of the Department of Chemistry through Professors Swain and Mitchell, we are glad gratefully to acknowledge the continued help of the Department of Mechanical Engineering in various ways. This help, and that now coming to us because of the relations entered into between this department and the Carnegie Institution and the Federal Government, have increased the scope and the efficiency of our work. These combinations are in every way encouraging, but unless still further means are provided by the University itself or by its friends we shall continue to lose, as stated in previous reports, those whose preliminary training has brought them to the point when they may begin their professional training as botanists. We cannot hold such students, unless we can aid them to meet their living expenses.

The collection of portraits of eminent naturalists has been continued in the usual way by purchase, and the Director of the Gray Herbarium of Harvard University has generously given us a copy of the rare portrait of Asa Gray engraved on wood and printed on silk paper by Krueel.

DOUGLAS HOUGHTON CAMPBELL,
Professor of Botany.

SYSTEMATIC BOTANY

The instructing body for the academic year 1909-10 consisted of Professor William Russell Dudley, Assistant Professor LeRoy Abrams and Acting Instructor James I. W. McMurphy. The herbarium assistants were Miss Josephine D. Randall and Miss Jessie P. Rose.

Miss Jessie P. Rose carried on a special study of the flora in the vicinity of Klamath Lake, Oregon, where she had spent two summers in field work.

Miss Josephine D. Randall, in coöperation with Professor Dudley, began a critical study of the flora of the Monterey Peninsula.

Mr. James I. W. McMurphy continued his studies on the *Madieae*. His thorough field work is bringing out valuable information concerning the distribution of this peculiar western group of compositae.

Assistant Professor Abrams continued his studies on the Southern California flora. During the present summer vacation he is holding a research scholarship at the New York Botanical Garden, where he is completing his paper, "A Phytogeographic and Taxonomic Study of the Southern California Trees and Shrubs."

Professor Dudley has continued his study of plant distribution in Western America, and also his studies on the flora of the Santa Cruz Mountain Peninsula.

Three thousand one hundred and thirty-one herbarium specimens were mounted for the general herbarium during the year. The mounting of a series of specimens illustrating the local flora was also undertaken, and will be completed during the coming academic year.

The courses of instruction given and the enrollment in each, were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Abrams	1. Spermaphyta	3	23	20
Dudley, McMurphy ..	2. Geographical Distribution and Forest Botany	3	..	11
Dudley, McMurphy ..	3. Fungi	4	4	..
Abrams	4. Elementary Taxonomy	2	..	8
Abrams	5. Compositae	2	2	..
Dudley	8. Phytogeography	2 or more	1	1
Dudley, Abrams	9. Special Taxonomy	2 or more	1	1
Dudley	10. Graduate	2 or more	1	...
			32	41

The two very small rooms available for general laboratory work are entirely inadequate for the present needs of the department. Temporary relief was given the second semester by being allowed the use of a room in the Geology Department on certain days; but it is essential that a permanent laboratory be allotted the department, where students and instructors may work without such serious handicap.

WILLIAM RUSSELL DUDLEY,
Professor of Botany.

PHYSIOLOGY AND HISTOLOGY

The teaching force of the department for the year consisted of Oliver Peebles Jenkins and Frank Mace McFarland, professors; and James Rollin Slonaker and Clara S. Stoltenberg, assistant professors; and Frank Walter Weymouth, laboratory assistant. Mr. John Floyd Pruett, Miss Ethel Watters and Mr. Carl Schaupp were employed as mechanical assistants.

In the following table of statistics the numbers by which the courses are designated are those used in the Register for 1909-10, to which reference may be made for explanation of the character of the courses:

INSTRUCTOR	COURSE	Unit Hours	Hours per Week		Attend- dance	
			Lec.	Lab.	1st Sem.	2nd Sem.
Jenkins, Slonaker, Weymouth ..	1. General Anatomy and Physiology	6	2	5	60	53
Jenkins, Slonaker	2. Physiology of Blood Cir- culation, Muscle	3	1	5	17	..
Jenkins, Slonaker	3. Physiology of Digestion, Respiration, etc.	3	1	5	..	18
Stoltenberg ...	4. Structure of the Ner- vous System	3	1	5	21	..
Stoltenberg ...	4b. Structure of Nervous System (Adv. Course)	2	..	6	..	3
Stoltenberg ...	5. Histology of the Ner- vous System	3	1	6	..	19
Jenkins, Weymouth ..	6. Physiology of Nervous System and Sense Organs	3	1	5	6	..
Slonaker	7. The Vertebrate Eye ..	2	..	6	..	1
Jenkins	8. Advanced Physiology ..	3	1	9	8	8
McFarland	9. Histology	3	1	6	24	26
McFarland	10. Histogenesis	3-5	..	9-15	2	..
McFarland	14. Special Histology	2-3	..	6-9	6	2
Department ...	15. Journal Club	1	1	..	19	16
McFarland	17. Research in Histology..	3-5	..	9-15	2	2
					165	148

RESEARCH WORK

Professor McFarland has continued his work on Opisthobranchiate Mollusca of South Pacific, California and Japan.

Dr. Slonaker has published in Proceedings of the Indiana Academy a paper entitled "Observations on Cerebral Localization," and in *Science*, a review of Eigenmann's "Eyes of Cave Vertebrates of North America." He has also two papers nearing completion, embodying the results of four years continuous experimentation, one on the normal activity of the white rat from birth to death due to old age; the other on the influence of diet on its growth, activity and longevity.

Assistant Professor Stoltenberg has continued her investigations on the nerve tracts in the brain and cord.

Miss Harriet E. Twombly, a student, worked upon the cytology of certain parasitic infusoria in termites.

Mr. J. R. Oliver, a student, worked upon the Spermatogenesis of the fur seal, *Callorhinus alascanus*.

OLIVER PEEBLES JENKINS,
Professor of Physiology.

HYGIENE

The tabulated statistics of the department for the year are given in the accompanying table:

INSTRUCTOR	COURSE	Hours per week	Unit Hours	Attendance	
				1st Sem.	2nd Sem.
	GENERAL EDUCATION COURSES				
Long, Maloney, Townsend, Davis	1. Personal Hygiene Gymnasium	3 Gym.	1	Men 329	288
	2. Public Health ...	2 Lect. 2 Lab. 2 Libr.	2	Women 82	67
	DEPARTMENT COURSES				
Snow, Randall.	3. Industrial Hyg....	9 Libr. and Rec.	3	Men 29	13
Long, Bolton..	4. Physical Training	3 Lab.	1-2	Women 2	3
Snow, Randall.	5. Epidemiology....	9 Libr. and Rec.	3		40
				473	439

The personnel of the Department of Hygiene for 1909-10 consisted of Associate Professor William Freeman Snow, Instructors Royce Reed Long and Harry Wilfred Maloney, Acting Instructors Florence Bolton and Vera Townsend, and Assistant W. R. D. Randall. The following were gymnasium assistants in the department during the year: E. G. McCann, A. F. Meston, J. P. Crawford, F. H. Hilton and J. H. Wiggins.

Associate Professor Snow was absent on leave during the year, as Secretary of the California State Board of Health. Acting Instructor Vera Townsend was absent on leave during the second semester, and her place was temporarily filled by the appointment of Miss Edna Grace Davis and Miss Lotita Corella as assistants.

Associate Professor Snow has had his leave of absence extended through the coming year. Miss Vera Townsend will continue her connection with the Sacramento High School for another year, and Miss Florence Bolton will be absent during 1910-1911.

The gymnasium athletic fields make a valuable addition to the gymnasium equipment. There is great need for more commodious dressing and locker rooms in both gymnasium buildings. There is also need for more and better paid gymnasium assistants. Both of these things must be possible if the department is to accomplish the results desired for this part of its work.

ROYCE REED LONG,
Assistant Professor of Hygiene.

ZOOLOGY

The faculty of the department consisted of Charles Henry Gilbert, George Clinton Price and Harold Heath, professors; John Otterbein Snyder, Edwin Chapin Starks and Walter Kenrick Fisher, assistant professors, and Willis H. Rich, laboratory assistant.

Professor Gilbert continued studies on the bathybial fishes of Japan and Bering Sea, and on the life histories of the steelhead trout and the salmon of the Pacific coast.

Professor Heath was engaged on a report of the *Solenogastres* from the Western Atlantic.

Assistant Professor Synder continued investigations on the shore-fishes of Japan, and completed papers on "The Fishes of Okinawa," one of the Riu Kiu Islands, and on "Japanese Shore Fishes" collected by the U. S. S. *Albatross*, Expedition of 1906.

Assistant Professor Starks was engaged on a report on the fishes of Puget Sound, and investigated further the osteology of the scombroid fishes.

Assistant Professor Fisher continued work on North Pacific star-fishes, and published four papers dealing with new genera and species within this group.

The following courses of instruction were given:

INSTRUCTOR	COURSE	Unit Hours		Attendance	
		Lect.	Lab.	1st Sem.	2nd Sem.
Price, Fisher..	1. Elementary Zoology....	1	6	60	42
Heath	2. Invertebrate Anatomy..	1	6	10	10
Heath	3. Invertebrate Embryology	1	5	...	3
Heath	4. Invertebrate (Adv.)....	..	6-9	5	2
Snyder.....	5. Vertebrates (Class)....	1	6	7	4
Snyder.....	6. Comp. Anat. Vertebrates	..	9	9	7
Price	7. Vertebrate Embryology..	1	5	20	6
Starks	8. Ichthyology .....	..	6-9	3	4
Gilbert	9. Ichthyology (Adv.)....	..	6-15	2	2
Gilbert	10. Journal Club	2	..	8	6
Snyder	11. Vertebrates (Adv.)....	..	..	2	1
Snyder	12. Comp. Anat. Vert. (Adv.) .....	..	..	...	1
				126	88

Investigations by students in the department resulted in the preparation of papers, as follows:

S. Stillman Berry, "Diagnosis of New Cephalopods from the Hawaiian Islands."

Helen Flickenger, "The Anatomy and Relationships of a New Species of Pteropod."

Eleanor Foshay, "The Anatomy of *Fissurella volcano*."

William F. Thompson, "The Larval Shell of *Acmaea*."

During the year the labor of tagging the large collection of fishes in the Zoological Museum was completed. Each specimen now bears a small tin tag stamped with a number corresponding with the museum record. This not only adds materially to the working value of the collection, but also insures it against a loss similar to that suffered during the earthquake of 1906. The following additions were made to the collections: The E. B. Towne, Jr., collection of 1260 bird skins, presented by Mrs. E. B. Towne, Jr.; about 800 specimens of British Guiana fishes, obtained in exchange from the Carnegie Museum; and many smaller gifts of specimens added from time to time.

CHARLES HENRY GILBERT,
Professor of Zoology.

ENTOMOLOGY AND BIONOMICS

The faculty of the department in 1909-10 was composed of Vernon Lyman Kellogg, professor; Mary Isabel McCracken, assistant professor;

Rennie Wilbur Doane, assistant professor and curator; Walter Kenrick Fisher, acting instructor in Bionomics; W. M. Mann, E. W. Rust, and W. M. Davidson, assistants; with David Starr Jordan as lecturer on Bionomics. The number of major students was thirteen, of whom three were graduate students.

The courses given were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
McCracken ...	1. Elementary Ent.	3	17	34
McCracken ...	1a. Morphol. and Physiol. of In- sects	3	2	7
McCracken ...	2. Class. and Devel. of Ins.	2 or 4	4	4
Doane	3a. Economic Ent. Orchard and Garden	2 or 3	..	4
Doane	4. Economic Ent. Coccidae	2 or 3	9	..
Doane	4a. Special. ....	..	..	6
Kellogg	5. General Entomology	1	..	20
Kellogg	6. Insects and Disease	1 or 2	..	23
Kellogg	7. Advanced Work	2 or 5	5	10
Jordan and Kellogg	8. Organic Evolution	1 or 2	105	62
			142	170

The investigations carried on during the year were:

By Professor Kellogg, on heredity and variation in the silkworm, *Bombyx mori* (tenth year); on determinate variation in *Diabrotica* (9th year); on the Mallophagous parasites of birds. By Assistant Professor McCracken, on the heredity of sporting melanism in silkworms (6th year); on the flight function in the silkworm, *Bombyx mori* (results published); on the heredity of bivoltinism in silkworms (6th year, results published). By Professor Doane, on the work of injurious insects in the smelter smoke region of Shasta County; on the classification of the Tipulidae. Professor Doane spent the summer in the Pathological Station of the University of California at Whittier, assisting in the investigations of insects affecting citrus fruits.

Recent graduates of the department have received appointments as professional entomologists in connection with mosquito sanitation in California, control of citrus fruit pests in California, and in the service of the United States Bureau of Entomology.

The principal additions to the department equipment during the past year were: One Leitz Binocular microscope; one Leitz Micro-tessa photographic objective, and six dozen insect cases.

The principal books added were: complete sets of the *Annales et*

Memoires de la Societe Entomologique de Belgique; Horae Societatis Entomologica Rossicae; and the Entomologist (London).

The pressing need of the department is a vivarium or insectary for the better carrying on of certain lines of work connected with the study of insect biology and economic entomology. Such an insectary is becoming indispensable for the proper development of the work of the department.

VERNON LYMAN KELLOGG,
Professor of Entomology.

GEOLOGY AND MINING

The department faculty for the year 1909-10 consisted of Professors John Casper Branner, James Perrin Smith, John Flesher Newsom, and James Farley McClelland; Assistant Professors Austin Flint Rogers, Galen Howell Clevenger, David Morrill Folsom, and Luthur William Bahney; and Assistants Welton Joseph Crook, Hugo Edmund Kramm, John R. Pemberton, Donald Steel, and Arthur Fay Taggart.

Professor Newsom was absent on leave for the year, engaged in private practice. Professor McClelland resigned at the end of the first semester to accept a position in the Mining Department at Yale, and Assistant Professor Folsom was appointed on March 1st to fill this vacancy.

The following additions to the equipment of the department were made during the year:

In Mining: Models from Richard Braun of Freiberg, Saxony, illustrating foreign practices in mining, timbering, and ventilating. Models of mine cars, cages, skips, etc., exemplifying American practice, were also purchased. Large models of headframes for vertical and inclined shafts were built by Mr. T. N. Turner and are in the museum room of the department. Machinery purchased for class illustration included one 48 inch sheave wheel, one ore bucket, and one stoping drill.

In Geology: There has been added one Bausch microscope for paleontological work. Two hundred hand specimens and thin sections of serpentines and associated minerals have been donated by Mr. H. E. Kramm; a collection of silver minerals from Tonopah, Nevada, was given by Mr. S. C. Herold; rock specimens and thin sections from Rawhide, Nevada, by Mr. H. W. Turner; and miscellaneous California rocks and minerals by Mr. Harold Hannibal. Mr. H. W. Turner also presented twenty-three volumes of the American Geologist and numerous pamphlets and separates. A study collection to illustrate occurrence, association, and origin of minerals has been started for the use of students.

In Metallurgy: A roller agitator, mounted on a special table and operated by a water motor, the design of Mr. G. H. Clevenger, has been provided. Other items of equipment are: A positive pressure blower operated by water motor; a lighting circuit throughout the laboratory;

a circuit for hot plates and small electric furnaces; an electric hot plate; equipment of a special room for metallography, calorimetry and operation of small electrical furnaces; fifteen drawings and water color sketches on heavy detail paper to illustrate lecture courses.

The following gifts in the Metallurgy division should be noted:

100 pounds of Mexican graphite, from U. S. Graphite Company, Saginaw, Michigan; 3 ore samples from Charles Butters & Co., Virginia City, Nevada; samples of Alaskan gold ore, containing antimony, from J. F. Newsom, Palo Alto, California; samples of silver ore containing manganese, from Creston-Colorado Co., Torres, Mexico; two samples of silver-gold precipitates, from the same company; samples of silver-gold precipitates, from Dolores Mines Co., Madera, Mexico; from El Rayo Mining Co., Santa Barbara, Mexico; and from Butters Divisadero Co., San Salvador, C. A. Samples of concentrates were received from Midas Mining Co., Knob, California. Three large framed photographs were presented by the Pacific Tank Co., San Francisco, California.

In Paleontology: A set of invertebrate fossils and fossil fishes was purchased to fill out the teaching collection; also a set of characteristic European fossils from France. The following gifts in this division may be noted: A collection of fossil leaves by Mr. J. S. Hook; a collection of tertiary fossils by Mr. J. O. Lewis; a large collection of fossils from Ventura County made by the University Geological Survey under Mr. J. R. Pemberton.

Mr. J. P. Smith has continued his researches in the paleontology of the triassic formation for the U. S. Geological Survey; he spent two weeks in field work in Shasta County, California, and four weeks in Idaho. He lectured on geology before the Yosemite Valley Chautauqua.

Mr. A. F. Rogers spent most of the summer vacation in preparing a textbook on mineralogy, making a short trip to Shasta and Siskiyou Counties, studying and collecting minerals. He has devised a specific gravity balance for laboratory use, by means of which the specific gravity of a mineral may be read off directly on the beam.

Mr. G. H. Clevenger made a study of the methods of copper smelting in Shasta County during the Christmas vacation. In the summer vacation he did experimental work upon the treatment of gold ore containing graphite, from Shasta County, and upon gold-silver ore, from Caliente, California. He has also conducted experiments on the treatment of the complex cobalt, nickel, silver ores of the cobalt district, Canada, and is at present investigating the effect of manganese upon the treatment of silver ores. He read a paper before the San Francisco section of the American Chemical Society upon the "Electro-metallurgy of Iron and Steel," and has in process of preparation papers on the "Recovery of Gold and Silver from the Iron-Copper Mattes of Sulphide Smelting," the "Determination of the Alkalinity in Cyanide Mill Solutions," and "Analyses of Cyanide Precipitates," which have already been accepted for publication.

The following table shows the courses given in the department during the year and the attendance of students:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Branner	1. Elementary Geology	3	175	...
Branner	1a. Physiography	1	...	36
Branner	2. Economic Geology	2	...	55
Pemberton, Macready ...	3. Topographic Geology	4	...	25
Pemberton, Macready, Parsons ...	4. Field Geology	5	...	25
Rogers, Kramm	5. Mineralogy	3	39	36
Rogers	6. Petrography	2	22	19
Smith	7a. Paleontology	4	15	...
Smith	7b. Historical Geology	4	...	29
Smith	8. Paleontologic Research	2-5	3	2
Rogers	9a. Crystal Morphology	1-3	4	...
Rogers	9d. Paragenesis of Minerals.....	2	...	5
Rogers	9e. Chemical Mineralogy	2	...	2
Smith	10. Advanced Paleontology	2	...	6
McClelland ...	Mining 1a.—Mining Methods.....	4	7	...
McClelland ...	Mining 1b.—Mining Methods.....	3	6	...
McClelland, Taggart	Mining 2.—Mine Plant.....	3	...	5
Clevenger, Bahney	Mining 8.—Metallurgy Lectures..	4	...	22
Clevenger, Bahney, Crook	Mining 9.—Metallurgy Laboratory	2	...	9
Clevenger	Mining 10.—Metallurgy of Iron and Steel	2	60	...
Clevenger	Mining 11.—Metallurgy	3-5	...	1
Clevenger	Mining 12.—Metallurgy Labora- tory	3-5	9	4
			340	281

Mr. L. W. Bahney has been engaged upon the design of special apparatus for pyrometric work in the field. At the annual meeting of the American Chemical Society in San Francisco he read a paper on a "Rapid Method for the Determination of Available Calcium in Lime used in Cyanide Work." He is at present engaged in the design of a rotary flame assay furnace.

Mr. J. R. Pemberton has made a study of the stratigraphy and paleontology of the Ventura folio, and has in preparation a paper on this subject for the U. S. Geological Survey. He also made a study of the geologic

and economic conditions of the oil industry in Kern County, California, during April and May.

Mr. Harold Hannibal has been engaged in investigations on the relations between the living and tertiary fresh-water invertebrate faunas of the West Coast, and has prepared for publication the chapter on fresh-water mollusca for the new edition of Keep's "Manual of West Coast Shells."

Mr. H. E. Kramm, assistant in mineralogy, completed his Master's thesis on the serpentines of the central coast ranges of California, which has been published in the Proceedings of the American Philosophical Society of Philadelphia.

JOHN CASPER BRANNER,
Professor of Geology.

MECHANICAL ENGINEERING

The teaching force in the department for the year 1909-10 was as follows: William Frederick Durand, Professor of Mechanical Engineering; Guido Hugo Marx, Professor of Machine Design; William Rankine Eckart, Associate Professor of Experimental Engineering; Everett Parker Lesley, Assistant Professor of Mechanical Engineering and Superintendent of Shops; Lawrence Edminster Cutter, Instructor in Drawing; Charles Norman Cross, Instructor in Experimental Engineering; Frank Oakes Ellenwood, Instructor in Experimental Engineering; Robert Long Daugherty, Instructor in Mechanical Engineering; Edward John Stanley, Instructor in Woodworking and Pattern Making; James Bennett Liggett, Instructor in Foundry; Theron James Palmateer, Instructor in Machine Shop; Robert Henry Harcourt, Instructor in Forge Shop.

During the first semester, 1100 student credit hours of instruction were given by 11 instructors, or an average of 100 per instructor. The similar figures for the second semester are a total of 1232 student credit hours, and an average per instructor of 112.

The work of the year was carried out in accordance with the regular program, except for some changes made necessary by the absence of the head of the department on leave from March 1st to the close of the academic year. By some redistribution of work for the second semester and the exchange and substitution of a considerable amount of problem and written work for the last two months instead of lecture work the courses given by the head of the department were safely left in charge of an instructor, and the work of the year in this manner suffered the minimum of derangement incidental to the absence above noted.

During the entire year, Professor Eckart was absent on sabbatical leave, and the work in the mechanical laboratory was temporarily in charge of Instructor Cross, aided by Messrs. Ellenwood and Daugherty, the latter appointed for the year on account of Professor Eckart's absence.

The classes taught and numbers in attendance are shown by the following tabular presentation :

INSTRUCTOR	COURSE	Kind of Work	Hours Credit	Atten- dance	
				1st Sem.	2nd Sem.
Harcourt	1a, 1b	Lect. and Shop	1 to 3	67	68
Liggett	3a, 3b	Lect. and Shop	1 to 3	48	42
Stanley	5, 6a, 6b	Lect. and Shop	1 to 3	79	52
Palmateer	7a, 7b, 8	Lect. and Shop	1 to 3	35	40
Lesley	9	Lecture	1	..	11
Cutter	11. El. Mach. Drawing	Drawing	2 or 3	61	56
Marx, G. H.	13a. El. Mach. Design..	Lecture	3	..	41
Marx, G. H.	13b. El. Mach. Design..	Drawing	2	..	41
Marx, G. H.	14. Machine Design.....	Lect. and Draw.	4	15	12
Marx, G. H.	15. Machine Design	Lect. and Draw.	5	5	..
Marx & Cutter.	16. Adv. Machine Design	Lect. and Draw.	3	10	9
	21. Calibration and Use of Engineering Apparatus	Lect. and Lab..	3	..	23
	22. Testing of Engines and Boilers	Lect. and Lab..	3	24	..
Cross	23. Testing of Pumping Machinery, Power Plant Auxiliaries. etc.	Lect. and Lab..	3	..	9
Ellenwood	24. Abridged Course in Experimental En- gineering	Lect. and Lab..	..	12	38
Daugherty.....	25. Advanced Course in Experimental En- gineering	Laboratory	1 to 5	5	..
	31. Heat Engines	Lect. and Office Work	2	22	..
	33. Heat Engines	Lect. and Office Work	3	58	24
	34. Thermodynamics ...	Lecture	1	..	10
Durand	35. Power Plants	Lecture	2	27	..
	36. Pumping Machinery.	Lecture	2	..	63
	37. Seminary	Lecture	1	12	7
				480	546

The general development of the work in the various branches of the Department of Mechanical Engineering has followed along lines similar to those discussed in previous reports, and further progress has been made in developing and co-ordinating the various lines of work in the department.

The general policy of adding some valuable definite item of equipment in the shops and laboratories has been followed by the purchase of a new

air compressor for the laboratory, a new motor driven crane for the foundry, and a new lathe for the machine shop.

The general needs of the department include further additions to the teaching force to cover important lines of work and further large additions to the equipment in the shops and laboratories in order to render such instruction most effective.

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

CIVIL ENGINEERING

The teaching staff of the department for the year 1909-10 consisted of Professors Charles D. Marx, Charles B. Wing, John C. L. Fish; Instructors John H. Foss and Charles Moser; Assistants Clarence E. Blee, John E. Elliott, Herman Endres, Valentine R. Garfias, Ralph L. Hughes, Joseph A. Killian, Robert E. Millsap, Homer J. Sharp, Sidney B. Shaw, Nelson Taylor, Burchell W. Upson, and Romney L. Vaughn.

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Foss and Assistants ...	1a. Linear Drawing and Lettering	1	134	...
Foss and Assistants ...	1b. Desc. Geometry	1-4	173	139
Fish and Assistants ...	4a. Elementary Surveying	5-5	44	34
Fish and Assistants ...	4b. Elementary Surveying	2	47	...
Fish and Assistants ...	6b. R. R. Location.....	2	21	...
Fish and Assistants...	6a. R. R. Surveying.....	5	...	50
Fish	6c. R. R. Construction.....	2	...	22
Wing and Moser	2a. Mech. of Materials.....	5	94	...
Foss	8a. Elements of Design	3	45	...
Wing and Moser	8b. Elements of Design	5	...	47
Wing and Moser	8c. Elements of Design	3	...	5
Wing	9. Railroad Bridges	5	35	27
Wing	Special Building Design.....	3	...	2
Hoskins	36. Hydraulic Motors	3	49	...
Hoskins	Eng. 3a. Hydraulics	3	...	82
Marx	12. Water Supply	5	34	...
Marx	Special, Water Supply.....	5	1	2
Marx	13. Sanitary Engineering	5	...	32
			677	442

The courses tabulated on page 56, with attendance as indicated, were given in the department.

The needs of the department in the matter of laboratories, fairly equipped, have been emphasized in former reports.

CHARLES DAVID MARX,
Executive Head.

ELECTRICAL ENGINEERING

The personnel of the department during the university year that closed July 31, 1910, was made up as follows: Harris Joseph Ryan, professor; Samuel Barclay Charters, Jr., assistant professor; William Arthur Hillebrand, instructor.

The lecture, laboratory and class instruction, and the corresponding number of students in attendance, are given in the following table:

INSTRUCTOR	COURSE	Lec- tures	Class	De- sign	Labor- atory	Attendance	
						1st Sem.	2nd Sem.
Charters, Hillebrand ..	1 a	3	..	..	1	53	..
Hillebrand	2a	1	..	..	..	14	..
Hillebrand	2a	..	4	..	..	..	15
Charters, Hillebrand ..	2b	..	..	..	4	..	15
Ryan	3a	3	..	..	..	17	..
Ryan	3a	5	..	..	..	..	15
Ryan, Charters, Hillebrand...	3bl	..	..	..	4	17	..
Hillebrand	3b2	..	3	..	..	17	..
Ryan	3c	..	..	4	..	..	15
Ryan, Charters, Hillebrand ..	3d	..	1	..	..	..	15
Charters	4	2	..	..	..	..	22
Charters	5	2	..	..	..	..	28
						118	125

The program of proper organization of the laboratory equipment and schedule of experiments begun in 1905 is now substantially complete. In the immediate future the energies and resources of the department applicable to laboratory facilities will be employed in amplifying our facilities for instruction in the electrical principles and phenomena that occur in the uses of high-tension currents for long-distance transmission of power, and the continuation of the development of facilities for standardizing equipment for electrical measurements and acceptance tests.

During the second semester the senior classes in Electrical and Mechanical Engineering, under the direction of their corresponding officers of instruction, furnished the technical force that made the several "acceptance tests" of the 1910 oil fuel, turbo-alternator "stand-by" station at Oakland, California, of the Great Western Power Company. The work was all done voluntarily at week-ends, and without interruption of regular University duty.

Gifts were made to the University for the department as follows:

Sample insulator, employed on the first transcontinental telegraph line, presented by Mr. A. S. Kalenborn, Stanford, E. E., '02.

Aluminum Cell Lightning Arrester Element, presented by Mr. A. S. Jones, Electrical Engineer.

Exhibits of parts of incandescent lamps, illustrating their process of manufacture, presented by Mr. Charles C. Anthony, Palo Alto Electric Works.

Messrs. Charters and Hillebrand completed the first section of their investigation of "Some Phases of Transformer Regulation." Their paper, based on the corresponding results, was presented at the October 29, 1909, meeting of the San Francisco section of the American Institute of Electrical Engineers, and published in the January, 1910, Proceedings of the national body, A. I. E. E.

In anticipation of the needs of the high-tension section of our laboratory, Mr. Ryan developed the cathode ray power diagram indicator as a satisfactory means for studying the losses of power into the atmosphere that occur from transmission lines when operated at electric pressures upwards from 75,000 volts. His paper reporting to the profession thereon has been accepted by the national body of the American Institute of Electrical Engineers, to be presented at a regular meeting, and to be published in the Transactions of the Institute.

The following electrical engineers from practice most generously responded to the invitation of the department to visit Stanford University for the purpose of addressing our students. The department employs this opportunity to express to these gentlemen a hearty appreciation of their valuable coöperation:

Mr. Ralph W. Pope, Secretary American Institute Electrical Engineers: Organization and Duties of the A. I. E. E.

Mr. Charles F. Scott, Consulting Engineer, Westinghouse Electric and Manufacturing Company, Pittsburg, Pa.: Manufacturers' Experience with Electrical Engineer Graduates.

Mr. F. V. T. Lee, Stanford, E. E., grad. class of 1901, Assistant General Manager, Pacific Gas and Electric Company: The Making of an Engineer.

Mr. Paul M. Lincoln, Electrical Engineer, Westinghouse Electric and Manufacturing Company, Pittsburg, Pa.: The Attitude of the American Institute of Electrical Engineers toward the College Student.

Mr. A. G. Jones, Electrical Engineer, General Electric Company, San Francisco: Lightning Arresters.

Mr. W. J. Davis, Jr., Chief Engineer, Pacific Coast, General Electric Company, San Francisco: Steam Turbines.

Mr. J. H. Klinck, Commercial Engineer, Westinghouse Electric and Manufacturing Company, Pittsburg, Pennsylvania: Standarization of Electric Motor Practice.

Mr. Edgar S. Bloom, General Superintendent of Plant, The Pacific Telephone and Telegraph Company San Francisco: The Telephone Wire Plant.

Mr. A. L. Alvord, Electrical Engineer, General Electric Company, San Francisco: The Testing Department of the General Electric Company in Relation to the Engineer Graduate.

Mr. C. E. Spaulding, Stanford E. E., '07, Sales Engineer, General Electric Company, San Francisco: The First Experiences in Practice of an Electrical Engineer Graduate.

Mr. J. G. De Remer, Electrical Engineer, Westinghouse Electric and Manufacturing Company, San Francisco: The Engineer Apprenticeship System of the Westinghouse Electric and Manufacturing Company.

HARRIS JOSEPH RYAN,
Professor of Electrical Engineering.

MEDICINE

The work of instruction in Medicine in Stanford University was formally inaugurated September 8, 1909, by a University Assembly, at which the principal address was delivered by Dr. Henry Christian, Dean of the Harvard Medical School. Dr. Henry Gibbons, Jr., Dean of Cooper Medical College, and professor in this department, presented a history of medical education upon this coast, and of the development of Cooper College; and an introductory address was delivered by the President of the University.

At the beginning of the past year, twelve students were registered in Medicine, and during the year fifteen altogether were enrolled. Of these, seven had already received the bachelor's degree from Stanford University, one from Oxford University, and one the degree of Ph. D. from Zurich, while the other six had completed the three years of undergraduate work in the University required as a minimum qualification for enrollment in the Medical Department. Of the fifteen, seven entered with all special requirements fulfilled, while eight were admitted with minor deficiencies in physics, biology or chemistry. Of these, six had by the close of the year completed these deficiencies by work taken in the regular classes of the University.

The teaching staff has been augmented by the appointment of Dr. Hans Zinsser as Associate Professor of Bacteriology, Dr. Albert C. Crawford as Professor of Pharmacology, Dr. Frank E. Blaisdell as Assistant Professor of Applied Anatomy, Dr. Ernest C. Dickson as Assistant Professor of Pathology, and Mr. R. M. Lhamon as Instructor in Anatomy. The duties of Professor Zinsser, Professor Crawford and Instructor Lhamon began with the opening of the current year, 1910-11, while the duties of Professor Blaisdell and Professor Dickson will begin with the second semester of the year.

The equipment for the work in Anatomy, Pharmacology and Bacteriology has been provided for by continuation of the reconstruction of the rear line of the old museum buildings. This work is not yet quite completed, but when finished will furnish efficient and convenient laboratories and equipment for those divisions of the work.

In May, 1910, Bacteriology was, by action of the Board of Trustees, made a separate division, and Professor Zinsser was appointed executive, while Professor Ophüls remains as executive of the Pathology and Legal Medicine.

The prospect of attendance for the second year of the Medical School is that, of the fifteen students in attendance last year, seven will continue their course here, the others having gone to eastern schools to continue their courses, or having for other reasons discontinued their medical course. The incoming class consists at present of ten students, a number which is likely to be increased somewhat but not greatly during the year. Until the work of the department is fully developed, and its reputation for first-class work throughout the course established, no considerable increase in student attendance can be expected.

The expenses of maintenance and equipment of the work of the department for the ensuing year, exclusive of the cost of reconstruction of the laboratory buildings, will by careful economy probably be kept within the appropriation made by the Board of Trustees, with addition of fees received from students. For the year following, and to a still greater degree for the succeeding year, it is manifest that the cost of maintenance will necessarily exceed considerably the present income, if it is hoped to maintain the status of the department as expressed in the resolutions of the special committee of the Board of Trustees (November 1, 1906) "to maintain a department of medicine on a basis of scholarship and efficiency equal to that of the very best medical schools of this country."

To bring the teaching in the clinical departments in San Francisco to a basis such as now exists in the best medical schools, and commensurate with the work as already organized for the first two years of the course, will require a considerable expense over what can be expected from fees or from receipts from paying wards of the Lane Hospital. The Lane Hospital should itself, in so far as possible, be placed on the basis of a teaching hospital, and, while it may not be practicable at once to use

it entirely as such, that is the end which should be kept in view and attained at no distant day. In adequately fulfilling this purpose, its earning power as a paying hospital will be impaired.

Upon the question of the cost of maintenance of a modern medical school, recent progress in the best medical schools of the country has thrown much light since the problem of establishing a medical department was first considered by Stanford University.

I may be permitted to recall that, as a member of a special committee appointed by the Board of Trustees in 1906 to consider this problem, I addressed to the secretary of the Board and chairman of the committee a letter, dated October 17, 1906, from which I quote:

"I do not at present have an adequate idea of the cost of maintenance of a first-class medical department, but from what I know thus far I should consider that the President's estimate of \$100,000 per annum within a few years, is conservative."

Though that estimate at that time may have been considered larger than justified by the available statistics from many high-grade medical schools, yet the recent rapid development of medical education appears to have justified the estimate as it applies to the present and immediate future of medical education. The recent Bulletin (No. 4) of the Carnegie Foundation on Medical Education presents many data bearing on this problem. For instance, with respect to the five departments of Physiology, Anatomy, Bacteriology, Pharmacology and Pathology, estimated to cover the course of the first two years, it is shown from the experience of well-equipped schools "that the five departments of a properly organized school capable of handling 125 students in its first two years can hardly be properly sustained on a total budget of less than from \$50,000 to \$75,000 annually. If, now, the student pays \$150 a year for tuition, there will be an annual deficit ranging from \$31,250 to \$56,250 a year."

With respect to the last two years of the course, the situation is thus summarized:

"The modern medical establishment that spends \$50,000 to \$75,000 upon its fundamental laboratories will, if it is to be equally productive in clinical medicine, spend an equal sum on teaching and investigation during the last two years, quite apart from the current maintenance of hospital and dispensary."

Making the same allowance for students' fees as above for the first two years, this would make a total net expense for the four years of from \$62,500 to \$112,500, neglecting the expense of maintaining a hospital for teaching purposes, and supposing 250 students to be attending the four classes.

With respect to our own conditions, it should be taken into account that the work of the divisions of Physiology (including Histology) and of Physiological Chemistry, is taken care of in departments already

existing in the University before the Medical Department was established, and not dependent upon its appropriations, and that a very considerable saving is thus effected to the Medical Department in the way of salaries, laboratory and equipment expense for that work. What this saving means to the Medical Department may be inferred from the statements in the Carnegie Bulletin above mentioned that Johns Hopkins spends \$13,246 per annum, on Physiology and Physiological Chemistry, and that Cornell spends in Ithaca (with eighteen students) \$13,500 on Physiology and Pharmacology, and in New York City Cornell spends \$14,940 on Physiology. As to the basis of the above calculations, data from first-class schools are given in the Bulletin cited (pp. 134 and 135).

It is a matter of the utmost importance to the future of the Medical School, therefore, that endowments should be secured which shall materially increase the present income of the Medical Department. Such endowments or donations might take the form of endowments of the hospital, or hospital wards, the establishing of free beds for teaching purposes in the Lane Hospital, or the endowment of chairs of instruction in medical or surgical branches.

Meanwhile the work of the department must be supported, at an increased expense over that estimated for the ensuing year.

The Lane Library is also in need of assistance to bind, catalogue and properly care for its valuable collection of medical books and serials, pending the time when its endowment will become available through the eventual distribution of the estate of Mrs. Lane. It is very desirable that this library should be placed in good working order within the next two or three years, even should the construction of the Lane Library Building upon the lot provided for it be somewhat delayed.

JOHN MAXSON STILLMAN,
Acting Executive.

APPENDIX II

REPORTS OF COMMITTEES

COMMITTEE ON STUDENT AFFAIRS

At the opening of the University, in September, 1909, there was the usual mild hazing of freshmen. Much of it indeed was accomplished before the men had actually matriculated. The committee was anxious that the students should of their own volition discontinue this custom. Student Advisor Roth was therefore advised of this fact, and asked to bring about the desired result through the University Conference of Men, or in any other way he preferred. In this matter the Conference did not respond as it was hoped it would, and at the beginning of the present year the hazing of freshmen has been more objectionable than ever. As a consequence announcement has been made by the Committee that such hazing will not be tolerated in future.

On many occasions, however, the Conference of Men has been found valuable, both in consultation, and as a medium of communication between this Committee and the larger body of students. In these directions it has made progress. The policy of the Conference as formally decided upon was not to undertake disciplinary action, but to confine its efforts to the prevention of affairs which might occasion necessity for such action.

During the year discipline has been imposed as follows:

DATE	NO.	OFFENSE	PENALTY
Aug. 31	2	Fraud in examination....	Suspension for one semester
Oct. 27	1	Fraud in examination....	Suspension indefinitely
Nov. 17	1	Fraud in class work.....	Suspension to Jan. 1
Dec. 15	1	Fraud in examination....	Suspension to June 1
Feb. 3	1	Immoral conduct	Suspension indefinitely
Mch. 7	1	Fraud in examination....	Suspension to September
Mch. 7	1	Permitting use of paper by another	Dropped from the class
Mch. 28	1	Use of offensive language in a public assembly....	Permanent suspension (suspended previously for other offenses)
Mch. 28	2	Use of liquor in Encina Hall	Suspended until September
Mch. 28	2	Use of physical violence toward a fellow student	Suspended indefinitely
Mch. 28	1	Exciting violence in an editorial	Required to vacate his ed- itorial position
May 14	1	Grossly immoral conduct.	Expelled
May 17	1	Fraud in examination....	Suspended indefinitely
May 17	1	Fraud in examination....	Suspended for one semester

In imposing the above penalties, suspension has been made for a semester, for an indefinite period, or permanent, in accordance with what the Committee judged the future conduct of the student would probably be.

During the year social events began to encroach upon the mid-week evenings, making necessary the adoption of a regulation restricting them to Friday and Saturday evenings.

On December 1, a regulation was adopted to the effect that no student should appear in more than one dramatic performance in any one semester. Some concessions were found necessary in the application of this rule in the case of events which had been in contemplation before the rule was made. The experiences of the year, however, confirmed the committee in the opinion that the regulation is a beneficial one.

On April 9, a death of a visitor to the University occurred from the capsizing of a canoe in Lagunita. After discussion with representatives of the owners of canoes, with the Students' Conference, and with representatives of the Boat Club, safety regulations governing the use of the lake were formulated and announced. These regulations restricted the use of canoes to good swimmers. Swimming was prohibited except within a prescribed area, and only at such times as life-saving appliances were at hand.

During the second semester a controversy arose among the students with reference to articles, appearing in the *Sequoia*, which charged unfair methods in conducting student politics and business. Some bitterness resulted. The faculty took no part in the controversy, until personal violence was done to the editor of the *Sequoia*. Then the two chief leaders in instigating this violence were suspended, and the editor of the *Daily Palo Alto*, whose editorial policy had incited personal violence, was required to vacate his position.

At many times since the opening of the University the need for special campus officers has been manifest, and the wisdom of employing such officers has been discussed. The following is an instance which illustrates this need: At a late hour one Sunday night during the year, a few students marched about the campus with a bass drum and other noise-making instruments. The windows of various houses were opened, and the volume of noise was increased by the addition of horns, gongs and shouting. In the end the din became so great that sleep was out of the question. When the noise had continued for twenty minutes or more (a long time for such an affair), a member of this committee found the leaders of the parade and stopped it. It was not, however, a task which a member of the instructing force should be compelled to assume.

In a community as large as that on the campus, made up chiefly of young people, and continually changing, the sense of responsibility is lacking. There are many matters on which the uninformed person needs information, and thoughtless persons need effective restraint. Among such matters may be mentioned the enforcement of boating and swimming regulations, the kicking of foot-balls and batting of base-balls on the fraternity lawns, to the annoyance of passers-by, and the blocking of cross walks and steps by students chatting and smoking between classes.

To check these matters, and to carry along from year to year a consistent policy regarding regulations, is essentially the work of a special officer. But officers, in order to serve the community in this matter, must be men of superior intelligence, informed as to University regulations and customs. Difficult as it is to secure such men, it is believed that they can be found, and that their employment would assist materially in placing good citizenship on the campus upon the same plane as elsewhere. This suggestion is not made in the belief that our students are unmanageable or less law-abiding than others, but in recognition of the fact that the campus community is without the ordinary municipal control and supervision. The committee therefore recommends the employment of two such special officers to have charge of order on the campus.

ARTHUR BRIDGMAN CLARK, Chairman.

COMMITTEE ON LITERARY CONTESTS.

The Committee for the year consisted of Professors Alden, Bassett, Krehbiel, Searles, and Seward.

Aside from the supervision of the usual literary contests, the Committee was called upon to arrange the regulations for a new competition—that for the Edward Berwick Junior Peace Prize, offered under the auspices of the California Peace Society. This prize, amounting to fifty dollars, is awarded to that speaker who, in a public contest, delivers the address which in the opinion of the judges is most effective in promoting the cause of international peace.

The Committee has also had under consideration the problem of inducing greater numbers of students to participate in the various literary contests. The interest generally shown in them has been comparatively slight. In the Bonnheim contest five premiums of \$25 each are offered for manuscripts, and the gaining of a premium entitles the winner to participate in the oral discussion and compete for a prize of \$125. Yet few manuscripts have been submitted. Objection has been raised that the themes announced for discussion in this contest have been of such a nature that students have hesitated to spend the time and energy necessary for preparation. This would seem to be supported by the fact that there were more contestants for the new Peace Prize, with its much smaller pecuniary reward, than for the Bonnheim Prize. With this in mind, in proposing the Bonnheim subject for this year, the committee endeavored to choose a subject which would involve less extensive reading and research in fields relatively unfamiliar to the students, and yet would provide no less severe a test of their powers of exposition.

While the winning of distinction in these contests should, in the opinion of the Committee, be a genuine and severe test of the abilities of the contestants, the tasks imposed should be of such a character as to invite effort of many serious-minded students. We are now endeavoring to bring about these conditions.

RAYMOND M. ALDEN, Chairman.

APPENDIX III

REPORT OF THE REGISTRAR

The number of students in attendance in 1909-10 was 1744. Of these 1135 had previously been in attendance, 609 were new students. As compared with 1908-09 there was an increase in old students of 2, in new students of 75, making a total increase of 77.

STATISTICS OF REGISTRATION, 1905-1910

	1905-06	1906-07	1907-08	1908-09	1909-10
Old students	1069	1155	1164	1133	1135
New students.....	717	513	574	534	609
	<hr/> 1786	<hr/> 1668	<hr/> 1738	<hr/> 1667	<hr/> 1744
Percentage of old students					
returning	68.2	64.6	69.7	65.1	68.
From California	1341	1329	1438	1319	1364
From other states	445	339	300	348	380
Percentage outside Cali-					
fornia	24.2	20.2	17.2	20.8	21.8

AVERAGE AGE AT MATRICULATION

Graduates*	30.	29.7	28.7	28.3	28.2
Advanced standing.....	22.7	21.5	22.8	22.3	22.5
Freshmen	20.	19.9	20.4	19.9	20.2
Specials	24.1	25.	25.1	24.	23.7

*From other colleges.

AGE OF FRESHMEN AT MATRICULATION

Under 17	11	5	4	4	5
17-18	45	34	41	33	29
18-19	112	89	104	89	104
19-20	152	118	123	111	117
Over 20	161	161	135	143	145
	<hr/> 481	<hr/> 407	<hr/> 407	<hr/> 380	<hr/> 400

STATISTICS OF ENTERING CLASS, 1909-10

	Number Entering	Number Returning 1910-11	Failed in Scholarship
From Colleges—			
Graduates	40	14 (35%)	3 (7.5%)
With advanced standing.....	120	77 (64.1%)	12 (10%)
Without advanced standing.....	15	16 (40%)	15 (20%)
	175	97 (55%)	30 (11%)
From Normal Schools.....	15	6 (40%)	1 (6.7%)
From Preparatory Schools—			
On recommendation (wholly or mainly) :			
In full undergraduate standing.....	350	283 (80%)	49 (14%)
In partial standing.....	13	9 (70%)	1 (7.7%)
Wholly on examination:			
In full standing.....	5	4 (80%)	
In partial standing.....	1	0	
	371		
As special students.....	50	31 (62%)	10 (20%)
	609	430 (70%)	91 (15%)

COMPARATIVE NUMBERS AT MATRICULATION

	1908-09	1909-10
From Colleges—		
Graduates	29	40
With advanced standing.....	90	120
Without advanced standing.....	18	15
	137	175
From Normal Schools.....	11	15
From Preparatory Schools—		
On recommendation (wholly or mainly) :		
In full undergraduate standing.....	324	350
In partial standing.....	13	13
Wholly on examination:		
In full standing.....	4	5
In partial standing.....	2	1
	343	384
As special students.....	43	50
	534	609
Total	534	609

CLASSIFICATION BY MAJOR SUBJECTS

	1906-07	1907-08	1908-09	1909-10
Greek	15	19	15	11
Latin	58	54	45	40
Germanic Languages	95	92	81	94
Romanic Languages	23	20	36	40
English	178	177	165	149
Philosophy	0	2	6	5
Psychology	6	4	3	3
Education	25	26	37	39
History	128	143	139	152
Economics	97	131	144	157
Law	299	295	37	86
Pre-Legal .....	..	..	211	189
Graphic Art	32	31	33	47
Mathematics	25	34	28	22
Physics	10	13	11	13
Chemistry	84	83	79	79
Botany	28	31	31	29
Physiology	64	53	55	70
Zoology	29	28	30	24
Entomology	12	11	9	13
Geology and Mining	126	123	127	100
Civil Engineering	146	185	169	196
Mechanical Engineering	73	66	63	60
Electrical Engineering	115	117	113	108
Medicine .....	..	..	..	15*
	1668	1738	1667	1744

*Including 6 also counted under Physiology.

DISTRIBUTION OF ENTERING CLASS, 1909-10

FROM COLLEGES, ETC.

Baker University	1	Edinburgh University	1
Bellevue College	1	Emory and Henry College....	1
Brigham Young University...	1	Fairmount College	1
Bucknell University	2	Franklin (Ind.) College.....	1
Butler College	1	Hamilton College	1
Case School of Applied Science	1	Hamline University	1
Colorado College	2	Harvard University	2
Columbia University	1	Haverford College	1
Cornell University	3	Indiana University	1
Dartmouth College	1	Iowa State College.....	1
Doane College	1	Johns Hopkins University....	1

Lake Forest University.....	1	Universtiy of Michigan	3
Marquette University	1	Minnesota	1
Mass. Agricultural College....	1	Nebraska	1
Mills College	2	Nevada	4
Monmouth College	1	New Mexico ..	1
Northwestern University	2	North Dakota..	1
Occidental College	8	Pacific	10
Ohio State University.....	1	Pennsylvania ..	1
Oregon Agricultural College..	1	So. California ..	17
Pomona College	18	Texas	2
Pratt Institute	1	Utah	1
Ripon (Wis.) College.....	1	Vienna	1
Rutgers College	1	Washington ...	3
Santa Clara College	5	Wisconsin	1
St. Lawrence University.....	1	Union Christian College.....	1
Smith College	2	Vassar College.....	3
Sorbonne, France	1	Waseda University	1
Syracuse University	1	Washington and Jefferson Col-	
Trinity College (Oxford)....	1	lege	2
University of Arizona	1	Washington State College....	1
California	9	Western Reserve University..	1
Chicago	7	Westminster College	1
Colorado	4	Westminster (England) Col-	
Denver	1	lege	1
Idaho	1	Woman's College (Baltimore)	2
Illinois	1	Yale University	2
Iowa	4	Yankton (S. D.) College....	1
Kansas	1		

FROM NORMAL SCHOOLS

Cedar Rapids (Ia.) State		San Jose State Normal.....	4
Normal	1	Utah State Normal.....	1
Chico State Normal.....	1	West Chester (Pa.) State	
Los Angeles State Normal... 2		Normal	1
New Mexico Normal School 1		Whitewater (Wis.) State	
Pennsylvania State Normal.. 1		Normal	1
San Diego State Normal..... 2			

FROM PREPARATORY SCHOOLS

Alameda H. S.....	3	Bellingham (Wn.) H. S.	1
Alhambra H. S.	2	Berkeley H. S.	6
Annie Wright Seminary....	2	Berkeley Prep. School	1
Arroyo Grande H. S.	1	Blair Academy	1
Azusa H. S.	2	Blees Military Academy.....	1
Bakersfield H. S.	2	Boise (Ida.) H. S.	2

Boones University School....	2	La Porte (Ind.) H. S.	1
Butte (Mont.) H. S.	1	Lebanon (Ind.) H. S.	1
Calif. Sch. Mech. Arts	1	Little Rock (Ark.) H. S.	1
Campbell H. S.	3	Lodi H. S.	1
Cañon City (Colo.) H. S....	1	Los Angeles H. S.	26
Castilleja School	4	Los Gatos H. S.	1
Chinook (Mont.) H. S.	1	Lowell H. S.	9
Cogswell Poly. H. S. (S. F.)	2	Lyceum (S. F.)	1
Colorado Springs (Colo.) H. S.	1	McKinley (Indianapolis) H. S.	1
Colton H. S.	3	Manzanita Hall	2
Corona H. S.	2	Marlborough School	2
Delta (Colo.) H. S.	1	Mercersberg Acad.	1
Denver (Colo.) (East Side)		Meriden (Conn.) H. S.	1
H. S.	1	Minneapolis (Minn.) H. S. ..	1
Denver (Colo.) (North Side)		Mission H. S. (S. F.).....	2
H. S.	1	Modesto H. S.	1
Denver (Colo.) Man. Train.		Monrovia H. S.	3
H. S.	1	Monterey H. S.	3
Dubuque (Ia.) H. S.	1	Morgan Hill H. S.	2
Durango (Colo.) H. S.	1	Mt. Tamalpais Mil. Acad....	2
Enid (Okla.) H. S.	1	Mountain View H. S.	1
Escondido H. S.	2	New York Mil. Acad.	1
Eureka H. S.	4	Notre Dame College.....	1
Evanston (Ill.) H. S.	1	Oakland H. S.	2
Everts (Wn.) H. S.	1	Oahu College (Prep.)	1
Fallbrook H. S.	2	Ogden (Utah) H. S.	3
Ft. Wayne (Ind.) H. S.	1	Ontario H. S.	1
Gas City (Ind.) H. S.	1	Orange H. S.	1
Gilroy H. S.	4	Palo Alto H. S.	26
Girls' Collegiate, Los Angeles	5	Pasadena H. S.	3
Girls' H. S. (S. F.)	4	Petaluma H. S.	1
Glendale H. S.	1	Philadelphia (Pa.) Girls' H. S.	1
Hamlin School	3	Phillips Exeter Acad.	1
Harker School	4	Pittsburgh (Central) H. S. ...	1
Harvard School (Los Angeles)	5	Placer H. S.	1
Hayward H. S.	2	Polytechnic H. S. (L. A.)....	16
Head's School	1	Polytechnic H. S. (S. F.)	2
Helena (Mont.) H. S.	2	Pomona College (Prep.)	1
Hemet H. S.	1	Pomona H. S.	2
Hill Mil. Acad. (Portland)...	3	Portland (Ore.) Academy	1
Hoitt's School	1	Portland (Ore.) H. S.	2
Hollister H. S.	1	Pueblo (Colo.) H. S.	1
Jackson (Ill.) H. S.	1	Redlands H. S.	4
Lake Forest (Ill.) Acad....	2	Red Wing (Minn.) H. S.	1
Lakeport H. S.	1	Redwood H. S.	5

Richmond (Ind.) H. S.	1	Sterling (Ill.) H. S.	1
Riverside H. S.	3	Stevens Point (Wis.) H. S. ..	1
St. Helena H. S.	1	Stockton H. S.	3
St. Johns Mil. Acad.	1	Susanville H. S.	1
St. Margaret's School	1	Sutter H. S.	1
St. Matthew's School	2	Tacoma (Wn.) H. S.	7
St. Paul (Minn.) Central H. S.	1	Thatcher School	1
Salem (Ore.) H. S.	1	Throop Polytechnic	2
Salinas H. S.	3	Tulare H. S.	1
Salt Lake (Utah) H. S.	2	Ukiah H. S.	1
San Bernardino H. S.	1	University Pacific (Acad.) ..	1
San Diego H. S.	5	University H. S. (Chicago) ..	1
San Fernando H. S.	1	University School (Cleve-	
San Jose H. S.	19	land, O.)	1
San Luis Obispo H. S.	1	University School (S. F.) ...	1
San Mateo H. S.	1	University So. California	1
Santa Ana H. S.	1	Vallejo H. S.	3
Santa Barbara H. S.	6	Ventura H. S.	2
Santa Clara College Prep....	1	Visalia H. S.	1
Santa Clara H. S.	5	Washburn School	4
Santa Cruz H. S.	3	Watsonville H. S.	5
Santa Monica H. S.	1	Waukegan (Ill.) H. S.	2
Santa Rosa H. S.	2	Weiser (Idaho) H. S.	1
Selma H. S.	1	Westlake School (L. A.)	5
Shortridge (Indianapolis)		Whittier H. S.	2
H. S.	1	Wichita (Kans.) H. S.	1
Sioux Falls (S. D.) H. S.	1	Wilmington H. S.	1
Snell Seminary	3	Winters H. S.	1
Spokane (Wn.) H. S.	2	Woodland H. S.	3
Starrett School (Chicago)	1	Yeates School	1

ON EXAMINATION.

College Entrance Examination Board and Stanford.....	1
College Entrance Board, Stanford, and University of California.....	2
Stanford and University of California.....	2
Yale and University of California.....	1

STATISTICS OF ENTRANCE EXAMINATIONS.

(Not including English.)

In August, 1908, the number of students taking entrance examinations was 128. Of these 6 were old students making up entrance deficiencies.

In August, 1909, the number of students taking entrance examinations was 130. Of these 6 were old students making up entrance deficiencies.

	August 1908			August 1909		
	Pass	Fail	Total	Pass	Fail	Total
Elem. Algebra	12	21	33	10	16	26
Adv. Algebra	3	16	19	1	10	11
Plane Geometry	12	18	30	11	24	35
Solid Geometry	4	10	14	1	5	6
Trigonometry	2	11	13	2	9	11
Physics	8	18	26	3	8	11
Chemistry	11	5	16	9	7	16
Physiology	2	11	13	4	4	8
Botany	1	3	4	1	0	1
Zoology	1	1	2	0	0	0
Ancient History	6	9	15	9	8	17
Med. and Mod. History	2	7	9	5	2	7
English History	4	17	21	7	10	17
American History	5	13	18	3	10	13
Elem. Spanish	1	4	5	1	2	3
Inter. Spanish	0	1	1	1	0	1
Elem. French	2	6	8	2	5	7
Inter. French	0	1	1	0	0	0
Adv. French	0	0	0	1	0	1
Italian	0	0	0	1	0	1
Elem. German	4	7	11	6	6	12
Inter. German	2	0	2	0	0	0
Adv. German	1	0	1	0	0	0
Elem. Latin	3	7	10	7	6	13
Adv. Latin	0	3	3	6	0	6
Elem. Greek	1	0	1	0	1	1
Freehand Drawing	3	21	24	8	18	26
Architectural Drawing.....	0	0	0	1	0	1
Mech. Drawing	18	5	23	21	7	28
Woodworking	31	11	42	12	18	30
Forge	22	13	35	10	6	16
Foundry	8	1	9	4	0	4
Machine Shop	9	0	9	7	0	7
Hygiene	0	4	4	0	4	4
	178	244	422	153	186	339

NUMBER OF SUBJECTS IN WHICH EXAMINATIONS WERE TAKEN BY THE
DIFFERENT CANDIDATES.

Of the 130 candidates for admission taking entrance examinations in
August, 1909,

75 entered the University.

13 of these 75 entered as special students.

6 entered as regular students wholly on examination, but none wholly on Stanford examinations; 2 had taken Stanford and University of California examinations; 2 College Entrance Board, California, and Stanford examinations; 1 College Entrance Board and Stanford examinations; and 1 Yale and University of California examinations.

August, 1908.		August, 1909.	
No. of Subjects.	Candidates.	No. of Subjects.	Candidates.
1	44	1	44
2	22	2	35
3	17	3	19
4	11	4	13
5	8	5	9
6	4	6	3
7	10	7	1
8	8	8	2
9	1	9	2
10	2	10	2
11	0	11	0
12	1	12	0

REGISTRATION OF STUDIES.

Fifteen units constitute a normal semester's work. The following was the actual registration during 1909-10:

		Number of Students.	
		First Semester	Second Semester
For	1 unit.....	0	2
2	.....	2	3
3	.....	3	1
4	.....	2	2
5	.....	0	3
6	.....	7	3
7	.....	3	9
8	.....	11	9
9	.....	11	9
10	.....	16	29
11	.....	29	36
12	.....	56	54
13	.....	201	175
14	.....	260	238
15	.....	533	468
16	.....	256	233
17	.....	140	153
18	.....	80	110
19	.....	0	3
20	.....	0	2
Over 20	.....	0	0

PETITIONS BEFORE COMMITTEE ON REGISTRATION, 1909-1910.

	First Semester	Second Semester
Total number of petitions acted upon.....	917	606
To change registration by dropping sub- jects, or taking up new subjects, or both...	647	371
To change major subject.....	51	21
*To register for fewer than thirteen units.....	*112	†100
To register for more than eighteen units.....	4	6
For leave of absence.....	55	60
Miscellaneous	48	48

*Of these 112 petitioning for fewer than thirteen units, 52 are included in change of registration.

†Of these 100 petitioning for fewer than thirteen units, 38 are included in change of registration.

STATISTICS OF GRADUATION.

The total number of degrees conferred in 1909-10 was 293, distributed as follows:

	Ph. D.	J. D.	A. M.	Engr. LL.	B.	A. B.
Greek	1	..	1	..	..	3
Latin	1	..	2	..	..	9
Germanic Languages	1	..	2	..	..	20
Romanic Languages .....	..	..	..	..	..	2
English .....	..	..	3	..	..	30
Psychology .....	..	..	..	..	..	2
Education .....	..	..	4	..	..	9
History	1	..	4	..	..	21
Economics .....	..	..	2	..	..	20
Law .....	..	4	..	..	..	24
Graphic Art .....	..	..	..	..	..	5
Mathematics .....	..	..	..	..	..	1
Physics .....	..	..	1	..	..	3
Chemistry .....	..	..	1	..	..	19
Botany .....	..	..	2	..	..	4
Physiology .....	..	..	..	..	..	11
Zoology .....	..	..	1	..	..	2
Entomology .....	..	..	..	..	..	3
Geology and Mining	1	..	1	1	..	13
Civil Engineering .....	..	..	..	..	..	29
Mechanical Engineering .....	..	..	..	1	..	10
Electrical Engineering .....	..	..	..	..	..	18
	5	4	24	2	..	258

In the case of the 258 students who received the degree of Bachelor of Arts the period of residence was as follows:

2 semesters	14
3 semesters	6
4 semesters	17
5 semesters	9
6 semesters	24
7 semesters	20
8 semesters	115
9 semesters	28
10 semesters	20
11 semesters	3
12 semesters	1
13 semesters	1

258

The 90 students who took their A. B. degree in less than four years were enabled to do this as follows ("extra courses," meaning courses in excess of the normal 15 units per semester).

Through advanced credit from other institutions.....	46
Through advanced credit supplemented by extra courses.....	24
Through advanced credit supplemented by summer work.....	2
Through advanced credit supplemented by summer work and extra courses	5
Through summer work and extra courses.....	5
Through credit for extra entrance units and extra courses.....	7
Through extra courses	1

90

FACULTY LEGISLATION

January 20, 1910, the Academic Council voted, in printing the annual *Register*, to conform to the recommendation of the Association of American Universities restricting the use of the term "course" to subdivisions of a subject; and to use the word "curriculum" in place of "course" in such expressions as a "four years' course of study," and the like.

In order to insure general uniformity of action among the various departments, the following statement concerning return of laboratory fees was adopted, the Department of Chemistry being specially exempted from its operation:

"Laboratory fees are ordinarily returnable as follows, when duly claimed in writing within two months after the date of withdrawal from the University: thus, the whole amount will be refunded when the student withdraws within one week of the beginning of a semester, and one half

the amount if the student withdraws before the middle of a semester; but no fees will be refunded on account of withdrawals after the middle of a semester, nor unless claimed in writing within two months after the date of withdrawal."

It was voted by the Executive Committee (February 17) that a day be specially designated in the calendar for the registration of graduate students, and that the Department of Hygiene be requested to relieve graduate students of the usual medical examination except as to vaccination.

The University regulation requiring that the last fifteen units for the Bachelor's degree be completed in the University was modified by the Council (May 20) as follows:

"In special cases students who have obtained at least ninety units of credit in resident work at this University, and who have completed all major department requirements, may be exempted from the general regulation regarding the last fifteen units."

On the recommendation of the Committee on Public Exercises, a rearrangement was made of the events of Commencement Week. In the interest of bringing together the more important events of the week with a view to increasing the attraction of Commencement for alumni and students, Commencement Day was placed on Monday instead of Wednesday, some of the events of Senior Week, such as the Promenade Concert and the Senior Ball, being allowed to follow the graduation exercises.

The Special Committee on University Organization, consisting of the members of the Executive Committee and of the Advisory Board, which had been appointed in May, 1909, carried on its deliberations throughout the year. Its report was presented to the Council at the meeting held May 20, 1910, and adopted. The report in full is given in Appendix IV. The primary work of the Committee concerned specific recommendations and suggestions which had been presented by the President. The results reached may be summarized as follows:

(1) A strong Graduate School is a necessary part of the University, but it is not practicable or desirable to create and maintain a graduate University except in combination with a strong undergraduate college.

(2) The elimination of the first two undergraduate years from this University is not feasible.

(3) The major department system as maintained at Stanford, with such modifications as experience may suggest, should be continued.

(4) The imposition of tuition fees upon undergraduates, is not desirable except as it may be necessitated by financial needs.

(5) Looking toward the future development of the University in prestige and service, special emphasis should be placed on advanced professional and graduate work. Ways and means of promoting this object should be considered further by a smaller committee specially selected for that purpose by the Academic Council from the full membership of the Council.

A re-statement of the major subject system formulated by the special committee was adopted by the Council and is included in Appendix IV. In general, the new formulation brings the definition of the system into correspondence with its actual working. It serves also to authorize and emphasize the more flexible features of the system as well as the duty of careful consideration and supervision of individual programs of study.

ORRIN LESLIE ELLIOTT,
Registrar.

APPENDIX IV

REPORT OF SPECIAL COMMITTEE ON UNIVERSITY ORGANIZATION

ADOPTED BY THE ACADEMIC COUNCIL, MAY 20, 1910

APPOINTMENT OF COMMITTEE

At a meeting of the Academic Council held April 6, 1909, President Jordan read certain tentative propositions looking toward a "possible reorganization of Stanford University on the Harvard plan." At the President's suggestion, this communication was referred to the Executive Committee. April 16, after discussion in the Executive Committee, the President expressed a desire to have the matter considered by a larger committee of the Council, and it was voted to recommend to the Council the appointment of such a committee. May 5, the President was authorized by the Academic Council to appoint a committee for this purpose, of which the members of the Executive Committee should form a part. May 13, the President completed the committee by naming the members of the Advisory Board to act with the members of the Executive Committee. In a letter of this date to the secretary of the Executive Committee, the President formulated some of the points to be considered. Later a more extended summary of the questions at issue was drawn up by the President and sent to the various members of the Special Committee. In a preliminary statement, the President said:

"It is impossible for the University to expect any great extension of scope or of expenditure in the next seven years, except through gifts, fees, or possible sale of properties. As this period will doubtless extend beyond the present administration, it is desirable to consider now very seriously how the University can be made most effective and most useful for this period. As to fees, it may be said that whatever is gained in money is lost through limitations of freedom to insist on standards, and through the elimination of students, earnest but impecunious."

ALTERNATIVES SUGGESTED BY THE PRESIDENT

The President suggested the consideration of a number of alternatives; in the matter of organization, the principal ones being:

- (a) To leave the present status unchanged—a college with university attachment;
- (b) To provide for the gradual elimination of the first two years, or the development on the Campus or off of a Junior College which should be made self-supporting;

(c) To reorganize all departments on a basis similar to that of the Law Department, with professional and technical courses two to four years long, beginning with the fourth year.

(d) To reorganize all departments on the Harvard plan, reducing the requirements for the A. B. degree to three or three and a half years, and making this degree prerequisite to admission to technical and professional courses.

In the matter of fees, the following:

- (a) To leave the present system unchanged;
- (b) To charge all undergraduates an equipment fee of from \$20 to \$50 per year;
- (c) To charge undergraduates a tuition fee of from \$75 to \$150 per year, abandoning the partial release from taxation now granted by the State;
- (d) To charge tuition fees in the Junior College only, making it partly or wholly self supporting;
- (e) To charge tuition fees for the first three years only;
- (f) To charge tuition fees for professional and technical work after the third year.

THE WORK OF THE SPECIAL COMMITTEE

The Special Committee met for organization September 21, and has held eleven meetings during the year. At the second meeting, an order of business was adopted and the principal subjects to be taken up for discussion defined as follows:

(1) Shall the University plan to build up its graduate and professional schools at the expense of the extent or cost of a well developed undergraduate school; or shall it look largely, as heretofore, to its own undergraduate to serve as feeders for its graduate departments?

(2) Shall the University anticipate the eventual elimination of the first two years of the present undergraduate course?

(3) Shall the work of the first two years be differently organized, as into groups of electives?

(4) Shall the requirements for the baccalaureate degree generally be arranged on a three-year basis?

(5) Apart from the financial needs of the University, is it desirable to impose tuition fees?

(6) If for any reason fees are to be collected from students, should these fees be uniform, or in proportion to the cost of instruction in the different courses, and against what classes of students should they be charged?

(7) In the light of such knowledge of the financial conditions and prospects as is possessed by the Committee, is any change in the present system of fees recommended?

In the discussions of the Special Committee, questions of organization have been considered primarily from the point of view of University policy. In view of the preliminary statement of the President, it has not been possible to eliminate financial considerations, but as far as might be, the two lines of argument have been kept distinct. Bearing in mind the restricted income of the University, the Committee has refrained from recommending measures or policies which, under present conditions and prospects, manifestly could not be carried out.

The Three Years' College Course.—The arguments for a three years' college course, as developed at Harvard, seem to be mainly two: first, the necessity that young men shall get an earlier start in professional life, and the belief, in view of greatly increased entrance requirements, that three years of college studies is a sufficient preparation for professional courses. Second, that in the case of those seeking only a general college education for purposes of personal culture, three years is better than four; it being economy both for the individual and for society, and in the matter of University endowments as well, that such students be given their degree, and to that extent encouraged to leave college, at the end of three years.

In considering these arguments, it is evident that the first does not obtain at Stanford, since there is no professional course which may not be entered upon at the end of the third year. Moreover, in the languages, history, economics, pure science, etc., there is no uniform point in the curriculum where advanced or specialized work may be marked off from elementary or general work. Again, under the system which Stanford has followed from the beginning, the fourth year brings to relative completion the definite undergraduate scheme of a department, and is important for the student who is not to continue his studies, as well as for the student who expects to follow out more advanced courses. As it is, nearly fifty per cent of our matriculates drop out before reaching the A. B. degree. The percentage of those who are lured on by the hope of a degree to stay longer than is profitable to them or to society may be considered as relatively small. To compress the major work now given in four years into three years would be possible in many departments, but presumably other studies deemed important would be crowded out, and in numerous cases the curriculum unduly narrowed. The argument that by cutting off outside activities and making requirements more stringent, four years work as now planned could be actually accomplished in three years, is debatable; but the actual means of accomplishing this result are not evident.

The Elimination of the First Two Years.—The elimination of the first two years of the college course is based upon several propositions: A university can not cover the whole field of education. It must choose a restricted field and particularly it must decide where its emphasis and strength will be placed. A more or less natural division can be made between the first two and the last two years, the former being devoted to general college studies, the latter to advanced and specialized work. The University does not need to do the relatively elementary work of the first two years, which will be taken up by the six-year high schools and the colleges. The undergraduate tone given by the presence of the two lower classes, interferes with the serious purpose of real university work. It would be a great advantage to this work to be rid of all except those studying with a definite purpose, and in a strictly university atmosphere.

The arguments on the other side are mainly practical. The successful establishment of six-year high schools is a problem of the future. Upper-

classmen coming from six-year high schools and small colleges with limited equipment and endowment, would not be as well trained or as far advanced as those who begin their college work here. Departments would nominally begin with juniors and seniors but would really be under the necessity of giving them the work now taken by freshmen and sophomores. More than this, elimination of the first two years would mean to a considerable extent, elimination of junior and senior years also. The migratory habit among American undergraduates is not pronounced, and the University could not count on receiving any large number of students into junior and senior classes from strong institutions. Assuming that so radical a transformation of the University could be readily made, the building up of strong professional and graduate schools is not thereby made certain. In view of the geographical isolation of the University, and the strong competition of professional and graduate schools in other universities, Stanford could not hope to secure any large number of graduate students without very lavish expenditure. It may be considered doubtful, if not impossible, to build up a graduate department at Stanford, except on the basis of a strong undergraduate department.

Reorganization of the First Two Years.—Accepting the present four years of undergraduate work, there is still the question whether the first two years may not be reorganized to advantage. The plan considered at length by the Special Committee, proposed, in place of the present major department system, the establishment by the faculty of a general-course scheme, the details of which might be worked out by the faculty, or by departments acting under general regulations enforced by the faculty. The major subject system, as far as retained, would then begin with the third year; the first two years would be given up to general courses, resulting in the withdrawal from these years of special and advanced courses, the reduction of the number of courses open to first and second year students, and the establishment of general type courses which should accommodate at one and the same time three classes of students: (1) department majors who are to continue with the subject; (2) non-majors requiring a general basic knowledge of a subject as preparation for their own special lines of study; and (3) those seeking merely a broad education. This proposal was offered, first, as giving the student a broader foundation, a better all around training, and second, as presumably less expensive, thus allowing, without increase of income, larger emphasis to be placed upon advanced and graduate work.

The assumption that after the completion of twelve years of school work ending with a four years high school course, the student needs another two years, devoted to general courses only, before he may enter seriously upon the study of the thing he likes, is too vague and arbitrary to have general application. It is a recognized commonplace that the value to the student of any study comes only in part from the subject studied. The personality of the teacher and the way in which the student reacts

upon his subject, are important elements. If students are ready to pursue profitably certain studies in which they are interested, the reasons requiring them to mark time in those subjects until a certain arbitrary division is reached, ought to be made very clear. Moreover, it is only a doubtful advantage which transfers emphasis to advanced and graduate years at the expense of retarding the advancement of the student. One characteristic advantage of the major subject system is that it provides all reasonable opportunity for the varying needs and tastes of individuals. It places the student under the guidance and supervision of that group of instructors whose experience and interest are most closely connected with the line of study which for the time being he has chosen as his main interest. Such a system may be imperfect if the "guidance" in individual cases is neglected or carelessly or unwisely exerted; but it is yet to be shown that guidance of students in mass by any faculty committee can be made more efficient.

The Question of Fees.—The question of tuition fees may be considered under two aspects:

(1) Are tuition fees desirable apart from the financial needs of the University? Whether free education is better for the State and the individual than education that is paid for, in part at least, by the individual, is abstractly debatable. The only point pertinent to the inquiry of the Committee is whether aside from direct financial needs, the change to a tuition basis would be likely, all things considered, to strengthen the University and enlarge its usefulness. In this connection, and quite apart from any abstract proposition, the geographical situation of the University must be considered, and the fact that free tuition prevails at all the State Universities, and practically throughout the whole field from which our students are drawn. The imposition of tuition fees would presumably largely diminish the number of students at Stanford. At any rate, it would discourage the attendance of many earnest persons of limited means who at present constitute a desirable class of students.

(2) The imposition of tuition fees, as a matter of financial policy, the Committee has not been able to consider, except in the most cursory manner. The Committee's ignorance of the present and prospective value of the tax exemption granted by the Legislature and based upon free tuition in other than professional courses, and of the present financial condition and future financial prospects of the University, would render any recommendations on this point valueless. Assuming that tuition fees are to be found necessary, in order to maintain the standing and insure the progress of the University, the question arises, in what manner and upon what classes of students such fees should be imposed.—whether unequally upon different groups, whether limited to the first two or three undergraduate years, whether applied to all graduate students, whether charged equally upon all students in the University. On this point the Committee believes that a uniform tuition fee upon all undergraduates would be the least objectionable form of such a tax, and that graduate students, except in

professional lines of work, may well be exempt. In this connection it is understood that laboratory and other special expenses would be an additional charge and adjusted in some such manner as at present.

So far as concerns the charging of an incidental or appliance fee, covering the whole or a part of such miscellaneous expenses of the University as are outside of salaries and permanent equipment, it is conceded that the sum proposed to be raised would not be sufficient to afford permanent financial relief, or to warrant any important extension of the work now undertaken by the University. The question is therefore one mainly of emergency finance and can not enter into a consideration of the larger of University policy.

Conclusions and Recommendations.—The following conclusions and recommendations are made:

1. The Committee on Organization recognizes that a strong graduate school is a necessary part of a university of high standing and usefulness, and believes that the maintenance and development of such a school should receive full financial and academic support. It does not, however, believe it to be practicable or desirable to create and maintain a graduate university except in combination with a strong undergraduate college.

2. The Committee believes that the elimination of the first two years of the present undergraduate curriculum is not feasible.

3. The Committee believes that as a means of administering the elective system, arranging choices, supervising and guiding the work of students, the major department system covering the four years work, with such desirable modifications as experience may suggest, should be continued.

In this connection, the Committee recommends that the definition of this system, as phrased in the Register statement for 1908-09, be changed and re-cast as follows:

"Each student selects as a major subject the work of some one department. The major department has the authority to prescribe not more than forty units in the major subject (exclusive of elementary courses in the major department which may be offered for entrance). The major department shall also recommend such other courses as it may consider desirable, and shall exercise an advisory supervision over the student's entire curriculum from semester to semester. Major department supervision of the student's study lists shall be administered in the spirit of the major subject system, which is to provide the inexperienced student with necessary advice and direction while developing his power of initiative, and to accord to the mature student larger and larger responsibility in planning his own curriculum. It shall be considered a general principle of university policy, to be departed from only in exceptional cases, that at least sixty of the one hundred and twenty units required for the degree be taken outside of the major department.

"In applied science the major department may prescribe so much of

the entire one hundred and twenty units as it shall deem essential to the technical or professional requirements of the major subject.

"A course in English Composition (English A) is prescribed for first-year undergraduates who do not satisfy the matriculation test.

"Within these limitations the work in all departments is elective, and the student may freely choose any course which his previous studies have prepared him to undertake.

"The recommendation of the major department is necessary to graduation."

4. The Committee believes that apart from the financial needs of the University, it is not desirable to impose tuition fees upon undergraduates; that if it seems necessary and best to meet such general expenses as heat, light, janitor service and library service from student fees, these should be met from a uniform general fee charged upon all undergraduates, instead of from special fees.

5. The Committee believes that while it is advisable to maintain a well-organized collegiate department, the proper policy of Stanford University, looking toward its future development in prestige and service, should place especial emphasis on advanced professional and graduate work, and that some plan should be formulated and put in operation looking toward the realization of this end. The Committee realizes that while its deliberations have resulted in negating certain proposals for change in the present policy of the University, there may be other possible solutions which should receive consideration. The Committee also believes that this subject should be considered further by a small committee specially elected for that purpose. The Committee therefore recommends:

(a) That the entire matter of University policy be referred to a new committee of the Academic Council, with instructions to formulate and to submit to the Academic Council recommendations for positive university action looking toward the development of graduate and professional work;

(b) That this new committee be elected at the first regular meeting of the Academic Council in September, 1910;

(c) That this new committee be composed of eleven members, one of whom shall be the President, who shall act as chairman, and ten of whom shall be elected from the entire membership of the Council by the Academic Council, after the manner of election of the representatives at large to the Advisory Board.

APPENDIX V

THE LIBRARY

The growth of the Library during the year is indicated by the following statement:

Volumes in Library, August 1, 1909.....	127,229
Added by purchase.....	9,316
Added by gifts and exchange.....	1,998
Added by binding.....	5,538
	<hr/>
Total volumes added.....	16,852
Less volumes withdrawn.....	200
	<hr/>
Net increase	16,652

Volumes in Library, July 31, 1910.....143,881

The major portion of the volumes acquired by purchase have been on account of the regular book fund subject to unit apportionment, and on account of the special appropriation for sets. There have been added, however, 592 volumes purchased on the syllabus fee account, 119 volumes purchased from the balance remaining in the Hoover-Mitchell fund, and 48 volumes from the Lathrop fund for Californiana. The apportionment of the units being substantially the same as for 1908-1909, which was printed in the Sixth Annual Report of the President of the University, I do not reproduce it here. Of the 5,538 volumes reported as being added on the bindery account, it should be explained that 1550 were newspapers which have been stitched and covered here at the Library during the past three years and which have only now been accessioned, while 1734 are pamphlets consisting of monographs considered of sufficient worth to justify separate treatment and which have been inserted in specially prepared covers by the Library's bindery assistant.

Under the gift account the largest single entry is 359 volumes belonging to the Stanford Estate which have now been transferred to the Library from the Museum. To Mr. H. W. Turner the Library is indebted for a gift of 73 volumes of geological journals, together with a large number of separates. Mr. Herbert C. Hoover has added still further to our obligations by a gift of 20 volumes of the Colliery Guardian. Mr. Timothy Hopkins has presented a set of Ongania's Basilica di San Marco, a beautiful work in 17 volumes; and Mr. Charles G. Lathrop has

generously added to his previous gifts for the purchase of Californiana the sum of two hundred dollars.

The Librarian has frequent occasion to write asking for copies of reports, monographs, and other material needed in connection with the University work. It is a pleasure to report the favorable responses usually granted to such requests. It is proper to note here, also, that during the past year through the efforts of Professor Young of the Department of Economics large additions have been made to our collection of reports of state railroad commissions. Through the efforts of Professor Adams of the Department of History we have received a full set of the statutes enacted by the Philippine Commission. Professor Treat of the same department has been enabled through the courtesy of the Chinese customs officials, to obtain for the Library the privilege of receiving the current numbers of the Customs Gazette.

The most notable single purchase during the year is that of the John R. Jarboe collection on the French Revolution. Mr. Jarboe, for many years one of the leaders of the San Francisco bar, during his lifetime had accumulated a large and valuable private library, and had devoted particular attention to the collection of material bearing upon the history of the French Revolution. It was not feasible to purchase the entire library. However, mutually satisfactory arrangements were made by which we acquired the entire portion relative to the French Revolution, together with a selection from the remainder of the library. The French Revolution material included 882 volumes and 1375 pamphlets; a large portion of the latter being contemporary publications. This material represents years of patient and judicious collecting and its acquisition makes this Library particularly strong in that period of French history.

Some of the more important purchases from the unit appropriation are here noted:

- B. Alberti Magni. *Ratisbonensis episcopi, ordinis praedicatorum, opera omnia*, ex editione, Lugdunensi religione castigata. Paris, 1890-99. 38 vols.
- Alegre, F. J.: *Historia de la Compania de Jesús en Nueva-España*. Mexico 1841-2. 3v.
- Crónica apostólica y seráfica de todos los Colegios de propaganda fide de misioneros franciscanos observantes*; Escrita por . . . Espinosa (y Arricivita). Mexico, 1746-92. 2v.
- Curtius & Adler: *Olympia*. Berlin. 1890-97. 5v. texts, 4 of plates and atlas.
- Contents: Topography, history, architecture, bronzes, inscriptions, remains.
- Deutsche tiefsee-expedition: Wissenschaftliche ergebnisse der Deutschen tiefsee-expedition auf dem dampfer "Valdivia," 1898-99*, hrsg. C. Chun. Jena, 1902-08. v. 1-8, 11, 14, 15.
- Estienne, Henri: *Thesaurus graecae linguae*, ab Henrico Stephanus constructus. Paris, 1831-65. 8 vols.
- Hakluyt society: *Publications*, 1847-1908. 123 vols.
- Michaux and Nuttall: *The North American sylva*. 5v. 1859.
- Migne, J. P.: *Patrologiae cursus completus. Series Latina*. Paris, 1844-66. 221 vols.

The special appropriation for the purchase of sets has now been in operation for two years. Against the \$16,000 thus available, orders have been placed amounting to \$15,866.30. These have been filled and bills therefor have been audited to the amount of \$12,891.25, while there still remain orders outstanding to the amount of \$2,975.05. While a majority of the purchases have been made through our regular agents, no opportunity to buy to advantage elsewhere has been neglected. Orders for catalogue offerings or for items specially quoted have been sent to various places in this country as well as to London, Edinburgh, Berlin, Leipzig and Rome. Following is a list of the sets thus far received on this account:

- L'Académie des sciences, Paris: Comptes rendus, 1835-1901. 130 vols.
 Academy, 1860-1904. 67 vols.
 Alemannia, 1873-1904. 32 vols.
 American academy of arts and sciences: Memoirs and proceedings. 1783-1815. 3 vols.
 American journal of archeology, 1885-1902, 17 vols.
 American journal of science, 1818-1907, 176 vols.
 American society for testing materials: Proceedings, 1899-1908. 8 vols.
 American society of heating and ventilating engineers: Transactions. 1895-1907. 12 vols.
 American society of naval engineers: Journal, 17 vols.
 Annales des sciences naturelles: Zoologie et Botanique, 1824-1891. 257 vols.
 Annals and magazine of natural history; series 7. 14 vols.
 L'Armée philosophique, 1890-1907. 17 vols.
 Archiv für mikroskopische anatomie. 54 vols.
 Archiv für papyrusforschung und verwandte gebiete, 1901-1908. 4 vols.
 Archiv für psychiatrie und nervenkrankheiten, 32 vols.
 Archiv für soziale gesetzgebung und statistik, 1888-1905. 23 vols.
 Archives de biologie. 20 vols.
 Association of engineering societies: Journal. 39 vols. Phila.
 Athenaeum, 1828-1890. 94v.
 Berg-und-hüttenmännische zeitung, 1842-1888. 47 vols.
 Bibliotheca zoologica (later Zoologica, hrsg. v. Leuchart & Chun. 1888 to date).
 Bibliotheque elzévirienne. 1856. 166 vols.
 Böhmer, ed: Regesta imperii. 1889-1904.
 Botanical society of Edinburgh: Transactions and proceedings. 23 vols.
 Botanische zeitung, 1843-90. 48 vols.
 British school at Athens: Annual. 1895-1906. 12 vols.
 British school at Rome: Papers. 2 vols.
 Cambridge and Dublin mathematical journal, 1846-54. 9 vols.
 Cambridge mathematical journal, 1839-45. 4 vols.
 Chemical gazette. 17 vols. 1842-1859.
 Civil engineer and architect's journal, 1837-68. 31 vols.
 Collection des chroniqueurs et trouvères belges. 70 vols.
 Cornhill magazine. 1860-1905. 92 vols.
 Corpus inscriptionum Atticarum. 3 vols. in 7.
 Curtis's Botanical magazine, 1787-1885. 111 vols.
 Deutsche chemische gesellschaft zu Berlin: Berichte. 1868-1908.
 K. Deutsches archaeologisches institut.: Antike denkmäler; 2 vols.
 K. Deutsches archaeologisches institut. Mittheilungen. Athenische abt. 1876-1907. 32 vols.

Early English text society: Publications:

- Original series, nos. 1-13, 15-32, 34-99, 112, 115-123.
 Extra series, nos. 1-62, 73, 77-89.
- École française de Rome: Mélanges d'archéologie et d'histoire. 1881-1903.
 23 vols.
- Edinburgh Philosophical journal. 1819-63. 89 vols.
- Electrical engineer. 7 vols. N. Y.
- Electrical engineer: new series. 19 vols. London.
- Electrical review. 26 vols. London.
- Electrical review. 34 vols. N. Y.
- Electrician. 20 vols.
- Engineering record. 23 vols.
- Engineers' club of Philadelphia: Proceedings. 24 vols. 1879-1907.
- English dialect society: Publications. 32 vols. 1873-96.
- English historical review. vols. 1-5.
- The entomologist. 41 vols. 1840-1908.
- Ephemeris epigraphica corporis inscriptionum Latinarum supplementum.
 1872.—8 vols.
- Fortnightly review. 55 vols. 1865-90.
- France-Ministere de l'instruction publique: Collection de documents
 inédits sur l'histoire de France. 1835.—198 vols.
- Gesundheits-ingenieur. 1878-1901. 24 vols.
- Graham's illustrated magazine. 1841-58. 36 vols.
- Great Britain—Corps of royal engineers: Professional papers. 1837-1906.
 64 vols.
- Grillparzer-gesellschaft: Jahrbuch. 18 vols. 1890-1908.
- Incorporated association of municipal engineers: Proceedings. 32 vols.
 1873-1908.
- Institution of mining and metallurgy: Transactions. 1892-1907. London.
 16 vols.
- Institution of mining engineers: Transactions. 10 vols.
- Institution of naval architects, London: Transactions, 1860-1908. 50 vols.
- Internationale monatschrift für anatomie und physiologie. vols. 1-15.
- Jahrbuch für gesetzgebung, verwaltung und volkswirtschaft im Deutschen
 Reich. 1877-1909. 33 vols.
- Jahresbericht über die fortschritte der classischen alterthumswissenschaft.
 (Bursian), vols. 1-18.
- Journal of social science, containing the proceedings of the American
 association. 14 vols.
- Journal of speculative philosophy, 1867-93. 22 vols.
- Journal of the institute of actuaries, 42 vols. 1852-1909.
- Das Kloster, von J. Scheible. 1845-9. 12 vols.
- Literaturblatt für germanische und romanische philologie. Heilbronn.
 11 vols.
- London, Edinburgh and Dublin philosophical magazine. 2d ser. 1827-32.
 11 vols. 3d series. 1832-50. 37 vols.
- London mathematical society: Proceedings. 26 vols.
- Massachusetts historical society: Collections. 1792-1907. 66v.
- Massachusetts historical society: Proceedings. 17 vols.
- Messenger of mathematics, preceded by the Oxford, Cambridge and Dublin
 messenger of mathematics. 30 vols.
- Mind, old series, 1876-90. 15 vols.
- Mines and minerals. 3 vols.
- Mining and scientific press. 54 vols.
- Monatschrift für psychiatrie und neurologie. 22 vols.
- Neue philologische rundschau. 1886-1908. 23 vols.

- Die neue rundschau. 1890-1906. Jahr. 1-17.
 Nouvelles annales de mathématiques. 1842-95. 54 vols.
 Notes and queries. 113 vols. 1849-1902.
 Palaestra. 34 vols.
 K. Preussische akademie: Deutsche texte des mittellalters.
 Preussische jahrbucher. 122 vols.
 Quarterly journal of pure and applied mathematics, 1857-1896. 27 vols.
 Recueil des travaux chimiques des Pays-Bas, 1882-1907. 27 vols.
 Revue d'économie politique, 1887-1906. 20 vols.
 Revue des études grecques, 1888-1908. 21 vols.
 Revue historique. 77 vols.
 Royal society of arts: Journal, 1852-1907. 55 vols.
 Royal society of London: Proceedings. 79 vols.
 Romanische studien. 1871-95. 6 vols.
 Royal society of Edinburgh: Transactions, 1788-1908. 43 vols.
 Russkoe entomologicheskoe obshchestvo, Saint Petersburg: Horae
 Societatis entomologicae Rossicae. 1861-1908. 38 vols.
 K. Sächsische gesellschaft der wissenschaften. Mathematisch-physische
 klasse. Abhandlungen. 1852-1908. 30 vols.
 Société entomologique de France: Annales et bulletin. 1832-1908. 77 vols.
 Society for psychical research: Proceedings 1892-1906. 20 vols.
 Society for the promotion of engineering education: Proceedings. 15 vols.
 Society of antiquaries of London: Archaeologia, 1773-1906. 60 vols.
 Society of Engineers: Transactions. 1860-1908. 47 vols. Lond.
 Society of naval architects and marine engineers: Transactions, 1893-1907.
 15 vols.
 Southern literary messenger. 1834-64. 38 vols.
 Spencer society: Publications. 20 vols.
 Staats- und socialwissenschaftliche forschungen, 1879-1906. 135 nos.
 Studi di filologia romanza. 9 vols.
 Surveyors institution, London. Professional notes, 1886-1905, vols. 1-13.
 Transactions, 1860-96, 28 vols.
 Western electrician, 1887-1908. 41 vols.
 Worcester Polytechnic Institute: Journal. 1897-1908. 11 vols.
 Zeitschrift für analytische chemie. 1862-1908. 47 vols.
 Zeitschrift für das berg-, hütten- und salinen-wesen im Preussischenstaate,
 1854-91, 39 vols.
 Zeitschrift für die oesterreichischen gymnasien. 1850-1908. 59 vols.

At the present rate of accession we shall soon be again confronted by the problem of shelving. Frequent shifting in the stacks is necessary to accommodate the new books, and the amount of available space is rapidly diminishing. It is extremely desirable that the unused space over the arcade be fitted with stacks to accommodate the public documents which would then be conveniently accessible to the History and Economics Seminars where most of the demands for this material arise. This would be a convenient location for those documents and at the same time would relieve the congestion in the main stack.

Miss Hays, classifier, was absent on leave during the first semester and returned to work in January. During her absence the classification was done under the direction of the chief cataloguer, Miss Sutliff, and was not allowed to fall into arrears. Miss Hays' assistant, Miss Little, resigned in June, and was succeeded by Mrs. Bennett, who had had several

months previous experience as an apprentice, to assist her in taking up the work. Miss Franklin and Miss James spent three weeks at Santa Cruz in listing the books of the Jarboe collection and finally at the beginning of June Miss James was transferred to the Lane Medical Library. Notwithstanding all of these handicaps, the work of classification and cataloguing has been kept abreast of the current accessions and something has been accomplished toward the disposal of accumulated work. Cards have been written for 4,286 volumes chiefly from departmental libraries, acquired in former years but not previously represented in the catalogue. Miss Sutliff reports a total of 16,363 volumes catalogued and 52,629 cards added to the catalogue, which now contains approximately 282,942 cards.

Work at the Loan Desk has gone along with as little friction as could be expected in view of the nature of the demands made upon it. Where we previously had four student assistants, in addition to the regular staff, each working periods of three hours daily, we have had two assistants giving full schedule time. The change has been very satisfactory.

Subjoined is a table showing the number of books issued from the main stack during the year, the total 155,661 being an increase of 14,779 volumes over the number thus issued for the preceding year. It speaks well for the efficiency of the staff at the Desk that this increased volume of work was handled so expeditiously.

Circulation, 1909-10.

August	2992	February	20518
September	18160	March	16067
October	23231	April	19068
November	18103	May	11303
December	11643	June	847
January	13239	July	490
		Total	155,661

In order to abate as far as possible the difficulties arising from the referring of large numbers of students to library books of which only an inadequate number of copies are available, the Librarian in May last sent a circular to the members of the teaching staff containing the following requests:

"That you send to the Librarian not later than June 1st a list of all books that will be referred to in your courses to be given during the first semester, 1910-11, and which you expect to be available at the Library.

"That you state as accurately as circumstances permit the probable number of students who may be expected to use such books."

This met with a gratifying response, and the Library was thereby enabled to prepare itself in a measure for the demands to come later. There is yet much to be accomplished, however, in adequately providing

for the demands arising from the requirements of some of the departments in the matter of collateral reading.

A handbook explaining the organization of the Library, and embodying such other information as will be helpful to an intelligent use of its resources, has been prepared and published. The system of classification is outlined, and the card catalogue is explained in detail. In short, we have tried to put into the book all that would be said to a body of new students to whom we might be trying to explain all that it would be necessary for them to know in order to make the best use of the Library with the least friction.

During the summer a complete inventory was taken of the books of the Library. During each of the two preceding summers a partial inventory was taken but this is the first time we have been able to cover the entire ground. The list of items unaccounted for is the accumulation of years and furthermore covers a period during which many changes have been made in class numbers, it is therefore quite probable that some of the books can yet be traced. The list is now being compared with the shelf list with this object in view.

Miss Provines, who had been an assistant at the Loan Desk since January 1908, resigned in June to assume a position in the State Library at Sacramento. We have been fortunate in securing Miss L. May Brooks, who has had valuable experience in the Library of the University of Minnesota, to fill the vacancy thus created.

The Library is now regularly receiving 980 periodicals, being an increase of 49 over the number reported last year. Of these, 100 come as gifts or by exchange, while 880 are upon our subscription list.

There has been much activity during the year in the matter of binding, an aggregate of 2,901 volumes having been bound. Of these 2,650 volumes represented serial material bound for the first time, while 251 volumes were books which much use had made it necessary to rebind. The amount has very materially reduced the accumulation of past years and I think we are justified in stating that at no time has the condition of our serials been better, or the bound volumes thereof brought more closely to the numbers last published.

As already stated, there have been several changes in the staff. Miss Provines and Miss Little resigned and Miss James has been assigned to the Lane Medical Library. Miss Bigley has accepted a position in the library of the University of California, and the vacancy thus created in the Catalogue department will not be filled. Miss L. May Brooks of the University of Minnesota comes to the Loan Desk in the place of Miss Provines. Mrs. Mira Bennett, who had done some months of practice work here, has a temporary appointment to the vacancy occasioned by the resignation of Miss Little. Miss Della Thompson, who graduated from this University in 1909, has been appointed to fill the vacancy in the Catalogue department caused by the transfer of Miss James.

The Stanford Library Club, an organization of which every one on the staff is a member, meets monthly during the college year. Matters of general interest to library workers are considered and occasionally talks on special topics are given by invited speakers. The meetings serve the purpose of bringing the members of the staff together socially, broadening their interest in the work, and nourishing an *esprit de corps*.

The annual meeting of the California Library Association was held at Long Beach at a time inconvenient for many of our staff to attend. The first district of this Association, however, including the larger libraries about San Francisco Bay, held its spring meeting on the Campus and was entertained by the Stanford Library Club.

GEORGE THOMAS CLARK,
Librarian.

APPENDIX VI

DEAN OF WOMEN

The more effective the work of a dean of women, the more personal its nature and the more difficult its record. But a general report upon questions affecting the whole body of women is in order.

Roble Hall, under the able management of its new matron, Miss Shirley Hyatt, has tested student government under a Committee of Five, and completed one of the most satisfactory years in its history. Another hall under University management would eliminate the objectionable rooming-house life among the women, and prevent the increase of sorority houses. Sorority houses have afforded the most satisfactory solution to the problem of living accommodations on the campus; but other problems inherent in their organization multiply with their number, and social functions increase in alarming proportion. Another University dormitory for women would simplify these problems, and reduce additional social functions to a minimum.

Young women could be required to live in dormitory for the first year of residence, and initiates into sorority houses would then be raised to sophomore standing, and the present system of "rushing" be abolished.

Despite the action of the Committee on Student Affairs confining social functions to Friday and Saturday evenings, such functions are yet too numerous and too elaborate. Further limitations are an immediate necessity, and if possible should be in favor of professional clubs and scholarly societies at the expense of affairs purely social and connected with the University only by the personnel of the participants.

With the conviction that too many women, unfitted for teaching, are drifting into that vocation, because they are not fitted for any other; that such women are in need of preparation for other fields during their university training, and that the present attitude of such women towards the existing curriculum is detrimental to the best interests of the University, I earnestly hope for an extension in certain departments that will afford an opportunity to pursue subjects more vitally connected with the future vocational needs of women.

EVELYN WIGHT ALLAN,
Dean of Women.

APPENDIX VII

STUDENT ADVISER

The work of the Student Adviser during the first year of the existence of this office has divided itself naturally into two fields.

The first of these has been the function of consulting with and advising underclassmen upon matters of academic or of personal interest. As a part of his registration each new student filed an information and study card with the Student Adviser. By this means an opportunity was afforded for meeting all first-year men and assisting them in the selection of their major departments and the arrangement of study courses. At mid-semester, scholarship reports were sent in to this office, and those students whose work was not satisfactory were interviewed with the object of discovering the reasons for their failure and assisting them. By means of these interviews with some hundred men, and an examination of the scholarship reports for the whole year, it was found that the average standard of scholarship was highest in Encina Hall. The fraternity and Palo Alto residents ranked next, and a noticeably low standard of work was found among the students living in private boarding houses upon the Campus. Another interesting fact shown was that the average standard of scholarship among the men engaged in athletics was above the average standard of the men generally.

By an active association with men in their athletics and other activities, and membership in the various student organizations, the Student Adviser has been able to keep in very close touch with student life. This close contact has also enabled him to form the acquaintances which are necessarily the basis for personal work.

The second field of work has been in matters of more general interest, such as the further organization and the general supervision of the work of the University Conference. It is through this organization that a system of student control is being developed in which the upperclassmen will realize and exercise a responsibility for the maintenance of good order and high ideals in University life. The Conference met regularly throughout the year and both faculty and students have taken a great interest in its work. A number of joint meetings with the faculty Student Affairs Committee were held for the discussion of various problems and the formation of such regulations as were deemed necessary. As a medium for the exchange of ideas the Conference has done much to bring about a clear understanding and a cordial relation between faculty and students.

The work of the past year has been largely experimental and it is hoped that the field of service to the University which has been afforded by the creation of the office of Student Adviser may this year be greatly extended.

ALMON EDWARD ROTH,
Student Adviser.

APPENDIX VIII

CHAPEL

Services of public worship have been held each Sunday of the academic year. On Thursdays during the first semester, an evening service was maintained. During the second semester a daily Chapel service has been held each morning at eight o'clock. This new service has been well attended by a congregation made up entirely of students, varying from twenty to fifty in number, a fair proportion being men.

The Chaplain has officiated at every service held in the University, except upon two occasions, while absent (1) as special preacher at Mills College, and (2) at the consecration of a new church at San Mateo.

Acting under the authority of the Board of Trustees, the Chaplain has invited clergymen of various denominations to preach at the Chapel service on alternate Sunday mornings.

The SPECIAL PREACHERS for 1909-10 have been:

Rev. Bradford Leavitt, Unitarian, San Francisco.
Rev. E. P. Dennett, Methodist, San Francisco.
Rev. Willis R. Hotchkiss, Friend, Africa.
Rabbi Martin Meyer, Hebrew, San Francisco.
Rev. Hugh Black, Presbyterian, New York.
Rev. William MacCormack, Episcopalian, Los Angeles.
Bishop Sydney Catlin Partridge, Kyoto, Japan.
Dr. Cochrane, Presbyterian, New York.
Rev. D. N. McCash, Christian Church, Berkeley.
Rev. J. Wilmer Gresham, Episcopalian, San Jose.
Rev. W. D. Symonds, Unitarian, Oakland.
Bishop Samuel Fallows, Reformed Episcopal, Chicago.
Rev. Robert MacKenzie, Presbyterian, San Anselmo.
Rev. A. W. Palmer, Plymouth Congregational Church, Oakland.
Bishop Spaulding, Episcopalian, Salt Lake City.
Rev. W. A. Patchell, Congregational, San Jose.
Rev. F. W. Clampett, D. D., Baccalaureate Preacher.

On the academic side the Chaplain has given a course of lectures "On the history of the life and teaching of Jesus, with a study of his words as recorded in the Gospels, and the application of his teaching to the life of to-day."

The Chaplain keeps office hours daily, from nine to twelve, and in the course of the year's work meets a large body of students for consultation on personal matters.

The Chaplain visits every sick or distressed student of whom he has knowledge, and makes regular visits each week to students in the hospital. He keeps in touch with student life through (1) calls upon students in their lodgings, (2) the hospitality of clubs, sororities and fraternities, (3) meetings of clubs and societies, and (4) acting in *loco parentis* for many freshmen committed to his care.

During the last semester the organist and members of the choir, with the consent of the chairman of the church committee, acquired a small pipe organ for use in the Chapel services. The choir assumes all financial responsibility and Mr. Buehrer is entitled to credit for his leadership in the matter.

D. CHARLES GARDNER,
Chaplain.

APPENDIX IX

MUSEUM

Work at the Museum was confined principally to the care of the collections, the working force being reduced to the least possible number in the interest of economy.

A large number of new labels were made and placed upon the exhibits, including little plates for the greater part of the paintings now hung.

The donations for the year include the current numbers of the "Daily Palo Alto," "Stanford Press," and "Alumnus." The two most important donations were a collection from the Egyptian Exploration Fund of Egyptian antiquities from El Mahasna and Abydos, consisting of baked clay ushabtis, glazed gods, seals, etc., nearly all from the XVIII dynasty.

From Don Pablo Vasquez, of Spanishtown, was received a particularly valuable collection of Mission Dolores relics, including the candle-stick, plowshare, model plow, and steel Roma or steelyard. The latter was given to the mission by Father Junipera Serra in 1776, and was the only one used on the Peninsula up to the year 1844. Don Pablo Vasquez inherited them from his father, who was the last Major-domo of Dolores Mission.

The attendance was exceptionally good for the entire year.

H. C. PETERSON,
Curator.

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS

1911

TRUSTEES' SERIES

No. 20

EIGHTH ANNUAL
REPORT OF THE PRESIDENT
OF THE
UNIVERSITY
FOR THE YEAR ENDING JULY 31, 1911

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1911

Leland Stanford Junior University Publications

TRUSTEES' SERIES.

NO.	DATE
1. The Leland Stanford Junior University. A pamphlet of information.....	(No date)
2. Address of Jane Lathrop Stanford to the Board of Trustees.....	February 11, 1897
3. Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4. Address of Jane Lathrop Stanford to the Board of Trustees.....	May 31, 1899
5. Address of Jane Lathrop Stanford to the Board of Trustees.....	October 3, 1902
6. Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees..	April 25, 1903
7. Petition filed in proceedings to establish and construe University Trusts.....	June 16, 1903
8. Decree in proceeding to establish and construe University Trusts.....	July 3, 1903
9. Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees.....	July 6, 1903
10. Organization of the Faculty of the University.....	March 31, 1904
11. Report of the Organization Committee of the Trustees upon the Organization of the University Faculty.....	March 31, 1904
12. First Annual Report of the President.....	December 31, 1905
13. Second Annual Report of the President.....	April 30, 1906
14. Third Annual Report of the President.....	December 31, 1906
15. Fourth Annual Report of the President.....	December 31, 1907
16. Trustees' Manual.....	November 1, 1908
17. Fifth Annual Report of the President.....	December 31, 1908
18. Sixth Annual Report of the President.....	December 31, 1909
19. Seventh Annual Report of the President.....	December 31, 1910
20. Eighth Annual Report of the President.....	December 31, 1911

TABLE OF CONTENTS

President's Report.

The Banishment of the Saloon.....	5
Fraternities and Chapter Houses.....	5
Vocational Training	6
Attendance	6
Building Operations	6
West Lectures	7
Eminent Visitors	7
Gifts	7
Faculty Deaths	8
Faculty Changes and Absences	9
Faculty Publications	11

Appendices.

I. Departmental Reports:

Greek	23
Latin	24
German	25
Romanic Languages	26
English Literature and Rhetoric.....	28
English Philology	30
Philosophy	30
Psychology	31
Education	32
History	34
Economics and Social Science	37
Law	38
Graphic Art	39
Mathematics	41
Applied Mathematics	41

I. Departmental Reports—Continued:	
Chemistry	42
Physics	46
General Botany	47
Systematic Botany	48
Physiology and Histology	50
Hygiene	52
Zoology	53
Entomology and Bionomics	55
Geology and Mining	56
Civil Engineering	59
Mechanical Engineering	60
Electrical Engineering	62
Medicine	64
The Seaside Laboratory	66
II. Committee Reports:	
Student Affairs	68
Delinquent Scholarship	69
III. Report of the Registrar:	
Statistics of Registration	71
Classification by Major Subject	73
Distribution of Entering Class	74
Registration of Studies	77
Statistics of Graduation	78
Faculty Action	79
IV. Report of the Librarian:	
Growth of Library by Years	84
Unit Distribution	85
Circulation	87
Personnel of Staff	87
Lane Medical Library	88
V. Report of Student Adviser	91
VI. The Memorial Church	93
VII. The Leland Stanford Junior Museum	95
VIII. Gifts	96

REPORT OF THE PRESIDENT

STANFORD UNIVERSITY, CAL., December 30, 1911.

*To the Honorable Board of Trustees,
Leland Stanford Junior University,*

GENTLEMEN :

I beg to submit herewith my report as President of the University for the academic year 1910-11.

No event of overshadowing importance has taken place in the year. The work of the student body has been better than ever before, a result which has been plainly due to the fact that alcoholic liquors have been banished from the neighborhood of the University, and to the fact that the University authorities are on record as unwilling to receive or retain, as members of the University, students who find alcoholism in any degree essential to their enjoyment.

The Banishment of the Saloon

The Supreme Court of California has made effective the statute forbidding the sale of alcoholic liquors within a mile and a half of the University grounds. This closes the saloons of Menlo Park. Those of Mayfield were many years ago abolished by town ordinance. The city of Palo Alto has never had saloons, the deeds of sale of all real property containing a clause involving forfeiture of any land on which alcoholic liquors are sold.

The problems of the fraternity and the chapter house are here as elsewhere not entirely settled, although many of the evils of exclusiveness and dissipation on the part of the fraternities scarcely exist at Stanford. It is, however, still true that the average scholarship of fraternity men at Stanford, as in all the larger universities, is below the average of that of the men of other groups. This condition is one that can not persist without injury to higher education and without menace to the fraternity system, which has now obtained such a strong hold in American universities. It may be that the fault lies in part with the fact of residence in chapter houses and with the temptation this gives to gregarious idleness and undue smoking together, a sort of second power idleness. It may be that the fraternities, choosing their members too early in the college course, have no adequate basis for

Fraternities and Chapter Houses

the selection of men likely to have a worthy college career. It may be that the student activities outside the class room bear too heavily on the fraternity men, many of whom are chosen mainly for their skill in such activities. This matter has been largely investigated in other institutions, and the remedy usually urged is this—to allow no student to be initiated into a fraternity nor to reside in a chapter house in his first year in college. A part of the evil is clearly due to the premature pledging of students in the high schools. Admitting the weakness in question, it is for the fraternities themselves, through their local chapters, their alumni and their national secretaries, to improve these conditions. In the final resort, the remedy lies with the faculties of the universities. A most pressing duty in university management is to give such personal advice, and to exercise such official authority, that students who have no adequate interest in their legitimate university work shall not cumber its classes. I believe that culture worthy the name can not be had without severe mental effort. Such effort

Vocational Training will be put forth only for the love of the work or through the belief that the work is in some degree related to success or joy in life. The entrance of the vocational element as a factor in the university has worked everywhere for better scholarship, unless the idea has been given too narrow a scope. The vocational work of the university should be the preparation of willing men and women to develop the largest ideals of personal and social effectiveness.

The attendance of students for the year has been 1758, as against 1744 for the preceding year. Of these students, 207 were in graduate standing, 136 of them accepted as candidates for advanced degrees.

Attendance The new students for the year numbered 581; those previously matriculated, 1177. The detailed classification of these students will be found in the report of the Registrar. The graduating class numbered 338, of whom four received the degree of Doctor of Philosophy, and 39 the degree of Master of Arts.

Two important pieces of building have been begun in the present year. One is the restoration of the Memorial church as a class A steel structure, along the lines of the original building wrecked by the earthquake of 1906. The other is the erection of the

Building Operations Lane Library in connection with the Medical School. This building is being erected on the corner of Sacramento and Webster streets in San Francisco, across the street from Cooper Hall and the Lane Hospital, now the property of the University. The building is of concrete, two stories in height, with ample reading rooms and stack rooms. It is built on funds left

by the will of the late Mrs. Levi Cooper Lane, widow of the founder of Cooper Medical College.

Provision has also been made for the restoration of the damaged wings of the University Museum, through a gift of Mr. Thomas Welton Stanford. The part to be restored is intended especially to house the large collection of paintings presented by Mr. Stanford in 1905.

A notable event of the year was the first series of the Raymond F. West lectures on Immortality, Human Conduct and Human Destiny. This course of three lectures was given by Dr. Charles Edward Jefferson of the Broadway Tabernacle church of New York City. They have been published by Houghton, Mifflin Company of Boston under the title, "Why We May Believe in Life After Death." The choice English, the fine earnestness, and the eminent fairness of these lectures made a strong impression on the students of the University.

The year was also noteworthy for the presence of eminent visitors, who spoke one or more times each in the interest of international peace. These were Miss Ida M. Tarbell of New York, the Baron D'Estournelles de Constant of La Fleche, senator of France; Professor Ernst Daenell of the University of Kiel, Kaiser Wilhelm professor to the United States, and Dr. James A. Macdonald, editor of the Toronto "Globe," the last named giving the Founders' Day address on March 9.

Among the gifts to the University for the year is one by Dr. Adolph Barkan, professor emeritus in the Department of Medicine, of \$10,000 for the endowment of that division of the Medical Library devoted to his special branch—diseases of the eye, ear and larynx. The conditions of this gift are set forth in the following extract from Dr. Barkan's letter:

"Considering the broad-minded and efficient support by the President and Board of Trustees of medical education; considering, also, the opportune visit of Professor Fuchs and the carrying out of the Lane Medical Library plans and purposes, I have decided to endow the eye and ear department of the library, transferring, with the consent of the Cooper Medical College Trustees, my previous gift of \$5000 on account of the former "Teachers' Fund," to that purpose, and adding to it now \$5000. The yearly income from this sum will fairly provide for the maintenance of this special library."

The Lane Medical Library received a notable addition during the year, in the medical library of the late Dr. G. L. Simmons, containing 1000 volumes, the gift of his sons, Drs. G. L. and S. E. Simmons of Sacramento.

The consummation of the plans for the Lane Medical Library building have been greatly aided by the following further gifts to the Medical Department:

From the Directors of Cooper Medical College.....	\$20,000
Mr. Charles G. Lathrop.....	5,000
Mr. Antoine Borel.....	2,500
Mr. J. Henry Meyer.....	2,500
Mr. Edward Coleman.....	2,500
Total	\$32,500

Important also is the gift by the late William Russell Dudley of his private botanical collections, numbering approximately 50,000 sheets and especially rich in the plants of the Sierra. Added to the specimens already in the collections of the Department of Botany, this brings the total collection up to 150,000 specimens. The collection will hereafter be known as "The Dudley Herbarium."

The University may here record its grateful appreciation of these gifts and many minor gifts, a list of which will be found in an appendix to this report.

The death of Dr. Matzke, of the Department of Romanic Languages, mention of which was made in my report of last year, has been deeply felt by the University community. It has been followed by the death of William Russell Dudley, of the chair of Systematic Botany, which occurred on June 4, 1911. The following brief account of his life may be here put on record:

William Russell Dudley was born in North Guilford, Connecticut, March 1, 1849. He entered Cornell University in September, 1870, and graduated with the degree of B. S. in 1874, receiving his M. S. in 1876 after spending some time in botanical studies in Strassburg and Berlin. He was instructor in botany at Cornell until 1876, becoming then assistant professor. He remained at Cornell University until his transfer to the professorship of Systematic Botany at Stanford University, in 1892. This chair he held until failing health caused his retirement in January, 1911, as professor emeritus under the Carnegie Foundation. As an investigator, Professor Dudley was persistent and accurate, doing his work for the love of it. He entered with great enthusiasm into the study of the California flora, the conifers of the Sierra being his especial delight. His extensive collections have been presented to the University and are known as the "Dudley Herbarium." He was a leading member of the Sierra Club and a frequent contributor to its bulletin, as well as to a wide range of botanical publications. Professor Dudley was one of the most respected, as well as best beloved members of the University faculty. No one could

come near him without recognizing the extreme refinement of his nature—a keen intellect, an untiring joy in his chosen work, and the Puritan conscience at its best, with clear perceptions of his own duties to himself and a generous recognition of the rights and aspirations of others. He died at Los Altos, California, June 4, 1911. He was never married.

The President was absent from the University on sabbatical leave for the first semester of the year, his first absence from University work except for reasons of University business or of public service, since the year 1880. Most of his time during this absence was given to the work of the World Peace Foundation, in Boston and in Europe. During this year his term of service as International Commissioner of Fisheries for the United States and Great Britain, came to an end, with the completion of the series of international regulations to govern the fishing in treaty waters. For the year the President has acted as a member of the California Fish and Game Commission, resigning August 1, 1911.

**Faculty
Changes and
Absences**

The following changes in the faculty for the year may be noted:

In Latin, Professor Fairclough was absent during the year, filling a professorship in the American School of Classical Studies at Rome.

In English, Assistant Professors Seward and Hall were absent on sabbatical leave. Associate Professor Alden resigned at the close of the year to accept a professorship in the University of Illinois. Instructor Bonnell also resigned to accept a position in the University of Wisconsin.

In Psychology, Associate Professor Martin was promoted to a professorship.

In Philosophy, Assistant Professor Sabine was absent during the year as a member of the faculty in the Sage School of Philosophy in Cornell University. Professor Addison M. Moore of the University of Chicago filled the vacancy in the department, as acting professor during the second semester.

In Education, Professor Cubberley was absent on sabbatical leave during the second semester, acting as Lecturer on Education at Harvard University. Assistant Professors Davidson and Bentley were promoted to the rank of associate professor.

In History, Professor Bolton resigned to accept the chair of American History in the University of California. Mr. Edgar Eugene Robinson of Carleton College, Minnesota, has been appointed assistant professor. Assistant Professor Treat was promoted to an associate professorship.

In Economics and Social Science, Professor Young was absent during the year on leave as Lecturer on Economics at Harvard Uni-

versity, resigning at its close to become Professor of Economics in Washington University at St. Louis. Associate Professor Whitaker was promoted to the rank of professor. Dr. Alvin S. Johnson of the University of Chicago has been appointed Professor of Economics and assumes the headship of the department for 1911-12.

In Law, Associate Professor Huston was promoted to the rank of professor.

In Applied Mathematics, Assistant Professor Manning was absent on sabbatical leave, spending the year in Europe.

In Physics, Assistant Professor Brown was absent on sabbatical leave.

In Chemistry, Dr. Stillman was absent on sabbatical leave during the second semester. Associate Professor Swain has been promoted to the rank of professor.

In Botany, Professor Dudley was retired under the Carnegie Foundation and became professor emeritus in January. Assistant Professor Abrams was made associate professor and curator of the "Dudley Herbarium." Professor Peirce spent the second semester of the year on sabbatical leave at the University of Wisconsin. Owing to the death of Professor Dudley, the departments of Systematic and General Botany have been merged into one department, under the executive headship of Professor Campbell.

In Hygiene, Dr. Snow continued absent on leave as Secretary of the State Board of Public Health. The work in Hygiene will, in the future, be carried on as a division of the Department of Medicine, and in view of this, with the beginning of the academic year 1911-12 the former Department of Hygiene will be discontinued and the work in physical training will be divided between the two gymnasia, that in Encina being under the direction of Assistant Professor Long, and that in Roble under the direction of Assistant Professor Clelia D. Mosher.

In Physiology, Assistant Professor Slonaker was absent on leave during the second semester. Assistant Professor Stoltenberg was promoted to the rank of Associate Professor.

In Zoology, Professor Price was absent on sabbatical leave during the second semester. Assistant Professor Snyder was promoted to the rank of Associate Professor.

In Geology and Mining, Assistant Professors Folsom and Clevenger were promoted to the rank of Associate Professor.

In Medicine, Dr. Ray L. Wilbur took up his active duties as executive head of the department January 1, 1911, relieving Dr. Stillman. Associate Professor Zinsser was made Professor of Bacteriology. Professors Barkan and Gibbons were retired from active duties, being made professors emeritus.

The following is a list of the publications of the individual members of the University Faculty:

ABRAMS, LEROY:

Flora of Los Angeles and vicinity (supplemental edition): *Stanford University Press*, 1911.

A phytogeographic and taxonomic study of the southern California trees and shrubs: *New York Botanical Garden Bulletin*, 6; September, 1910.

Professor Dudley's work: *Stanford Alumnus*, 12; February, 1911.

ADAMS, EPHRAIM DOUGLAS:

Communication to the editor, *American Historical Review*, 16; January, 1911.

An American series of general history; review of "Europe since 1815," by Charles Downer Hazen: *The Dial*, 49; October, 1910.

A century of empire, vol. 2, by Sir Herbert Maxwell, (review): *American Historical Review*, 16; January, 1911.

A history of the Irish parliamentary party, by Hugh O'Donnell, (review): *American Academy of Political and Social Science*, 36; November, 1910.

James K. Polk, (review): *The Dial*, 49; November, 1910.

Les négociations de Lille, 1797, by Charles Ballot, (review): *The Dial*, 16; July, 1911.

The return to Macaulay: *The Dial*, 49; November, 1910.

ALDEN, RAYMOND MACDONALD:

Palace made by music; Indianapolis, Bobbs-Merrill, 1910.

According to Lucy: *Good Housekeeping*, 51; September, 1910.

ANDERSON, MELVILLE BEST:

Tribute to President Jordan on his sixtieth birthday: *Stanford Alumnus*, 12; February, 1911.

ANGELL, FRANK:

Note on some of the physical factors affecting reaction time, together with a description of a new reaction key: *American Journal of Psychology*, 22; January, 1911.

BASSETT, LEE EMERSON:

Miracle plays at Stanford: *Stanford Alumnus*, 12; January, 1911.

Teaching of poetry in the public schools; part 1: *Western Journal of Education*. July, 1911.

BLICHFELDT, HANS FREDERICK:

On the order of linear homogeneous groups; fourth paper: *American Mathematical Society Transactions*, 12; January, 1911.

BOLTON, HERBERT EUGENE:

Expedition to San Francisco Bay in 1770; diary of Pedro Fages, edited by H. E. Bolton: *Academy of Pacific Coast History Publications*, vol. 2, No. 3; July, 1911.

Jumano Indians in Texas, 1650-1771: *Texas Historical Association, Quarterly*, 15; July, 1911.

BRANNER, JOHN CASPER:

A brief grammar of the Portuguese language with exercises and vocabularies. New York, Holt & Co., 1910.

Syllabus of a course of lectures on economic geology; 3d ed. Stanford University, 1911.

Aggraded limestone plains of the interior of Bahia and the climatic changes suggested by them. *Geological Society of America*, 22; 1911.

Comparison of the effects of the earthquakes of Mendoza, Valparaiso, Kingston and San Francisco: *Seismological Society of America, Bulletin* 1; 1911.

Geology and topography of the Serra de Jacobina, State of Bahia, Brazil: *American Journal of Science*, 30; December, 1910.

Geology and topography of the Serra do Mulato, State of Bahia, Brazil: *ibid.*, 30; October, 1910.

Geology of the coast of the state of Alagoas, Brazil: *Annals of the Carnegie Museum*, 7; November, 1910.

Methods of geologic investigation and publication: *Economic Geology*, 6; January-February, 1911.

Minerals associated with diamonds and carbonados in the State of Bahia, Brazil: *American Journal of Science*, 31; June, 1911.

Reviews of seismological literature: *Seismological Society of America, Bulletin*, 1; 1911.

South America, Encyclopaedia Britannica; ed. 11, v. 25, 1911. Suggested organization for seismological work on the Pacific Coast: *Seismological Society of America, Bulletin*, 1; March, 1911.

Tombador escarpment in the State of Bahia, Brazil: *American Journal of Science*, 30; November, 1910.

CAMPBELL, DOUGLAS HOUGHTON:

The embryo-sac of pandanus: *Annals of Botany*, 25; July, 1911.

The eusporangiate—the comparative morphology of the ophioglossaceae and marattiaceae: *Carnegie Institution of Washington, Publications*, No. 140; 1911.

The nature of graft-hybrids: *American Naturalist*, 45; January, 1911.

Notes on some California green algae: *Torreyia*, 11; January, 1911.

Plant morphology in America: *Plant World*, 14; May, 1911.

Some recent books on fossil plants: *American Naturalist*, 45; July, 1911.

CANNON, HENRY LEWIN:

English history: *Nation*, 92; August, 1910.

(With Krehbiel, E. B.): History course at Leland Stanford; History training course by H. L. Cannon: *History Teachers' Magazine*, 2; October, 1910.

CHARTERS, SAMUEL BARCLAY, JR.:

Engineering course for under-classmen: *Society for the Promotion of Engineering Education, Bulletin*; June, 1911. (With Hillebrand, W. A.)

The problem of technical education with special references to conditions on the Pacific Coast: *Paper presented S. F. Sec. A. O. E. E.*, October 28, 1910. (With Hillebrand, W. A.)

CHENEY, WILLIAM FITCH:

Diagnosis of duodenal ulcer: *American Journal of Medical Sciences*; March, 1911.

Hyperchlorhydria: *California State Journal of Medicine*; February, 1911.

CLARK, GEORGE ARCHIBALD:

The much misunderstood fur seals of Bering Sea: *Popular Science Monthly*, 77; November, 1910.

COOPER, WILLIAM ALPHA:

Quelle zu Faust, 682f.: *Goethe Jahrbuch*, 32; 1911.

Alt's edition of Goethe's Faust, (review): *Nation*, 91; August, 1910.

Braun's Margaret Fuller and Goethe, (review): *Journal of English and Germanic Philology*, 10; April, 1911.

Goethe's Gespräche, III-IV, (review): *Nation*, 93; July, 1911.

Hirschberg's Rückert-Nachlese I, (review): *Nation*, 92, March, 1911.

Morris's Der junge Goethe, (review): *Journal of English and Germanic Philology*, 10; July, 1911.

Noe's Das junge Deutschland und Goethe, (review): *Nation*, 92; April, 1911.

Reception of Goethe's Faust in England, by Hauhart, (review): *Deutsche Literaturzeitung*, 31; December, 1910.

Schiller's Persönlichkeit, (review): *Nation*, 91; November, 1910.

CRAWFORD, ALBERT CORNELIUS:

A review of the chemical work done on the active principle of ergot: *American Journal of Pharmacy*, 83; April, 1911.

CROSS, CHARLES NORMAN :

Right-angled triangular weir: *Power and Engineer*, 32; September, 1910.

CROSS, IRA BROWN :

Common sense of socialism, by John Spargo, (review): *Annals of American Academy of Political and Social Science*, 37; July, 1911.

Evolutionary socialism, by E. Bernstein, (review): *ibid.*, 37; March, 1911.

History of California labor legislation, by L. Eaves (review): *American Economic Review*; March, 1911.

History of the great American fortunes, vol. III, by G. Meyer, (review): *Annals of American Academy of Political and Social Science*, 36; November, 1910.

Twentieth century socialism, by E. Kelly, (review): *ibid.*, 37; January, 1911.

State socialism in New Zealand, by Le Rossignol and Stewart, (review): *ibid.*, 37; May, 1911.

CUBBERLEY, ELLWOOD PATTERSON :

The Baltimore report, (digest): *Journal of Education*, 74; July, 1911.

Educational administration and state system of education. Articles in Monroe's *Cyclopedia of Education*, vol. 1; 1911.

Fundamental administrative problems; in research within the field of education: *Society of College Teachers of Education, Publications*; 1911.

(With Brown, E. E., and Kendall, C. N.): Report of Commission appointed to study the system of education in the public schools of Baltimore: *U. S. Bureau of Education, Bulletin No. 4*, 1911.

DOANE, RENNIE WILBUR :

Annotated list of the literature on insects and disease for the year 1910: *Journal Economic Entomology*, 4; August, 1911.

Insects and disease. New York, Holt; 1910.

DURAND, WILLIAM FREDERICK :

Practical marine engineering; 3d enl. ed., New York, 1911.

Impressions of recent hydroelectric practice in Switzerland: *Engineering Record*; November, 1910.

On the control of surges in water conduits: *Journal American Society Mechanical Engineers*; June, 1911.

ELLOTT, ORRIN LESLIE :

University standards and student activities: *Popular Science Monthly*, 79; July, 1911.

ESPINOSA, AURELIO MACEDONIO:

Articles on Los Hermanos Penitentes, Nevada, New Mexico: *Catholic Encyclopedia*; 1911.

Lenz: Los Elementos indios del Castellano de Chile, (review): *Revue de dialectologie Romane*; December, 1910.

Metipsimus in Spanish and French: *Modern Language Association, Publications*; June, 1911.

New Mexican Spanish folk-lore: *Journal of American Folk-lore*, 23; October-December, 1910.

La Poesia popular de Nuevo Méjico: *Revista Positiva*, Mexico, May, 1911, No. 134.

The Spanish language in New Mexico and Southern Colorado: *Historical Society of New Mexico, Publication*, No. 16; May, 1911.

FISHER, WALTER KENRICK:

Asteroides of the North Pacific and adjacent water; pt. 1, Phanerozonia and spinulosa: *U. S. National Museum, Bulletin* 76; June, 1911.

Dance of the Laysan albatross: *Collier's*, 46; November, 1910.

The genus Blakiaster Perrier: *Bulletin of Museum of Comparative Zoology, Harvard College*, 44; March, 1911.

Hyolinothrix, a new genus of starfishes from the Hawaiian islands: *U. S. National Museum, Proceedings*, 39; March, 1911.

New genera of starfishes from the Philippine islands: *ibid.*, 40; May, 1911.

Two new genera of starfishes: *Annals and Magazine of Natural History*, ser. 8, vol. 6; January, 1911.

FLÜGEL, EWALD:

In memoriam—John Ernest Matzke (Words spoken at the memorial services in Stanford chapel, September 30, 1910). Recollections of Dr. Furnivall, F. J. Furnivall, a volume of personal record; 1911. F. J. Furnivall: *Anglia*, 33; 1910.

Prolegomena and side notes of the Chaucer dictionary: *ibid.*, 34; 1910.

FOSTER, BENJAMIN OLIVER:

On certain euphonic embellishments in the verse of Propertius: *American Philological Association, Transactions*, 40; 1910.

Latin version: *Classical Weekly*, 4; 1910.

GILBERT, CHARLES HENRY:

Notes on lantern fishes from Southern Seas, collected by J. T. Nichols in 1906: *American Museum of Natural History, Bulletin*, 30; March, 1911.

GRAY, HENRY DAVID:

The poor professor: *Educational Review*, 42; June, 1911.

GUÉRARD, ALBERT LÉON:

Les États-Unis du monde. 14th of July address: *L'Echo de l'Ouest*; July, 1911.

Impressions of military life in France: *Popular Science Monthly*, 78; April, 1911.

HEATH, HAROLD:

Solenogastres: *Harvard University Museum of Comparative Zoology, Memoirs*, 45; June, 1911.

HEMPL, GEORGE:

The solving of an ancient riddle. Ionic Greek before Homer: *Harper's Magazine*, 122; January, 1911.

HILLEBRAND, WILLIAM ARTHUR:

(With Charters, S. B., Jr.): The problem of technical education with special references to conditions on the Pacific coast. Paper presented San Francisco section A. I. E. E.; October, 1910.

(With Charters, S. B., Jr.): Engineering course for under classmen: *Society for the Promotion of Engineering Education, Bulletin*; June, 1911.

JENKINS, OLIVER PEEBLES:

Our educational system; its cause and cure: *Western Journal of Education*, 15; November, 1910.

Snobbishness: *Sierra Educational News*, 6; November, 1910.

JOHNSTON, OLIVER MARTIN:

Italian historical infinitive. Studies in honor of A. Marshall Elliott, v. 2; 1911.

JORDAN, DAVID STARR:

The call of the nation. Boston: *American Unitarian Association*; 1910.

The charm of Japan: *Berkeley Lyceum*, 4; March, 1911.

Description of a collection of fossil fishes from the bituminous shales at Riacho Doce, State of Alagôas, Brazil: *Carnegie Museum Annals*, 7.

Great American universities: *Independent*, 69; November, 1910.

Individuality in California: *Sierra Educational News*, 7; May, 1911.

Leading American men of science. New York, Holt; 1910.

The making of a Darwin: *Science*, N. S., 32; December, 1910.

(With Thompson, W. F.) Note on the gold-eye, amphiodon Aloisoides rafinesque or Elattonistius chrysopsis: *United States National Museum, Proceedings*, 38; August, 1910.

Notes on a collection of fishes made by James Abbott at Irkutsk, Siberia: *Annals of the Carnegie Museum*, 7; 1910.

- Notes on ichthyology: *American Naturalist*, 44; October, 1910, and 45; July, 1911.
- Report on the work of the International fisheries commission: *U. S. Congress*, 61; Sess. 3, House doc. 1375; January, 1911.
- (With Thompson, W. F.) A review of the fishes of the families Lobotidae and Lutianidae found in the water of Japan: *U. S. National Museum, Proceedings*, 39; 1911.
- (With Evermann, B. E.): A review of the salmonid fishes of the great lakes, with notes on the white fishes of other regions: *Bureau of Fisheries, Bulletin*, 29; February, 1911.
- Sane business temperance: *Western Journal of Education*, 16; February, 1911.
- The stability of truth; a discussion of reality as related to thought and action; being the third series of John Calvin McNair lectures before the University of North Carolina at Chapel Hill, New York, Holt, 1911.
- Save time: *Independent*, 71; August, 1911.
- A system of uniform and common international regulations for the protection and preservation of the food fishes in the international boundary water of Canada and the United States: *Sessional paper*, 105; April 11, 1908.
- A theory of sex determination: *Science*, n. s., 33; March, 1911.
- Ulrich Von Hutten: Boston, American Unitarian Association, 1910.
- University fellowships and correspondence: *Science*, 33; February, 1911.
- The use of numerals for specific names in systematic zoology: *Science*, n. s. 33; March, 1911.
- The value of time: *Cornell Era*, 43; March, 1911.
- War and Manhood: *Popular Science Monthly*, 78; January, 1911.
- Waste of War: *Maryland Quarterly*, No. 6; May, 1911.
- Woman and the University: San Francisco, Whitaker & Ray, 1910.
- KELLOGG, VERNON LYMAN:**
- The animals and man; an elementary textbook of zoology and human physiology: New York, Holt, 1911.
- (With Paine, J. H.) Anoplura and Mallophaga from African hosts: *Bulletin of Entomological Research*, v. 2; July, 1911.
- An experiment in double mating: *Science*, n. s. 33; May, 1911.
- Heredity and its laws: *Independent*, 71; August, 1911.
- Insect breeding: *Report of the American Breeders' Association*, v. 6; 1911.
- Is there determinate variation? *Science*, n. s. 32; December, 1910.
- (With Paine, J. H.) Mallophaga from Bolivian birds: *Entomological News*, v. 22; January, 1911.

- (With Paine, J. H.) Mallophaga from California birds: *ibid.*, v. 22; February, 1911.
- (With Paine, J. H.) Mallophaga from birds and mammals of the Panama Canal Zone: *ibid.*, 21; December, 1910.
- A new polycytenid: *ibid.*, 21; November, 1910.
- KREHBIEL, EDWARD BENJAMIN, AND CANNON, H. L. :
History courses at Leland Stanford. Introductory courses by E. B. Krehbiel: *History Teachers' Magazine*, 2; October, 1910.
- MCCRACKEN, ISABEL :
Chap. 21-28 on human structure and physiology in V. L. Kellogg: *Animals and Man*.
- MARTIN, LILIE J. :
The projection method. Paper read at the nineteenth annual meeting of the American Psychological Association, held at Minneapolis, December, 1910. Résumé published in the *Psychological Bulletin*; February, 1911.
- MARX, GUIDO HUGO :
Should the same salary be paid to men bearing the same titles? *Bryn Mawr Alumnae Quarterly*, 5; April, 1911.
University fellowships: *Science*, n. s. 33; March, 1911.
- MEYER, ARTHUR WILLIAM :
The question of applied anatomy: *Anatomical Record*, 4; October, 1910.
Some aspects of the medical curriculum of today and of tomorrow: *American Medical Association Journal*, 55; August, 1910.
- MILLIS, HARRY ALVIN :
Abstract of report on Japanese and other immigrant races in Pacific coast and Rocky Mountain states: U. S. Immigration Commission Report, 1911.
East Indian immigration to British Columbia and the Pacific States: *American Economic Review*, 1; March, 1911.
Population and immigration: *American Association, Bulletin*, 4th series, No. 2; April, 1911.
Taxation. Discussion: *ibid.*; April, 1911.
- MIRRIELES, EDITH RONALD :
With assistance: *American Magazine*, 72; May, 1911.
- MITCHELL, JOHN PEARCE :
Study of the normal constituents of the potable water of the San Francisco peninsula: Stanford University, 1910. *L. S. J. U. Publications, University Series*, No. 3.
- MOSHER, CLELIA DUEL :
A case of onychogrypsis: *Women's Medical Journal*; November, 1910.

Functional periodicity in women and some of the modifying factors: *California State Journal of Medicine*; January and February, 1911.

MURRAY, AUGUSTUS TABER:

On a use of $\Delta O K \Omega$: *Classical Philology*, 5; October, 1910.

NEWCOMER, ALPHONSO GERALD:

Keat's Missal: *Nation*, 92; June, 1911.

Shakespeare's sapphire-gatherer: *Nation*, 92; May, 1911.

OPHÜLS, WILLIAM:

Occurrence of spontaneous lesions in kidneys and livers of rabbits and guinea pigs: *Society for Experimental Biology and Medicine, Proceedings*, 8; 1911.

Spontaneous nephritis in wild rats: *ibid.* 8; 1911.

PEIRCE, GEORGE JAMES:

American botany: *Plant World*, 14; April, 1911.

An effect of cement dust on orange trees: *ibid.*; January, 1911.

Why the tarring of roads is injurious to vegetation: *Scientific American*, 103; 1910.

PONZER, ERNEST WILLIAM:

The Calculus in technical literature: *Science*, 34; August, 1911.

A homemade planimeter for class room use: *School Science and Mathematics*, 11; March, 1911.

A slide rule for class room use: *ibid.*; December, 1910.

A study in efficiency: *ibid.*, 10; October, 1910.

Applied mechanics for engineers, by E. F. Hancock, (review): *Bulletin American Mathematical Society*, 17; October, 1910.

Differential calculus, by W. W. Johnson, (review): *ibid.*, 17; March, 1911.

Sammlung von Aufgaben zur Anwendung der Differential- und Integralrechnungs, by F. Dingeldey (review): *ibid.*, 17; January, 1911.

PRICE, GEORGE CLINTON:

The structure and function of the adult head kidney of *Bdellostoma stouti*: *Journal of Experimental Zoology*, 9; December, 1910.

ROGERS, AUSTIN FLINT:

Eglistonite from San Mateo county, California: *American Journal of Science*, 32; July, 1911.

New specific gravity balance: *Science*, n. s. 34; July, 1911.

New synthesis and new occurrences of covellite: *School of Mines Quarterly*, 32; July, 1911.

RYAN, HARRIS JOSEPH :

Contributions to the discussion of practical method of protecting insulators: *American Institute of Electrical Engineers, Transactions*, 29; August, 1910.

Open atmosphere and dry transformer oil as high-voltage insulators: *ibid.*, 30; January, 1911.

A power diagram indicator for high tension circuits: *ibid.*; April, 1911.

SANFORD, FERNANDO :

Atomic charges and cohesion: *Physical Review*, 32; May, 1911.

On positive atomic charges: *ibid.*, 32; May, 1911.

Physical theory of electrification: *Leland Stanford Junior University Publications. University Series*, No. 6; May, 1911.

SEARLES, COLBERT :

Library of Jean Chapelain and its catalogue: *Bibliographical Society of America, Papers*, 5; June, 1911.

SEWARD, SAMUEL SWAYZE, JR. :

Note-taking: Boston, Allyn & Bacon. 1910.

SHOW, ARLEY BARTHLOW :

Historical significance of the religious problem in the German schools: *Education*, 31; March, 1911.

SKINNER, MACY MILLMORE :

Aspects of German teaching in America: *Educational Review*, 41; January, 1911.

Brief notes on the indebtedness of Spielhagen to Dickens: *Journal of English and German Philology*, 9; 1910.

Cribbing and the use of printed translations: *School Review*, 18; September, 1910.

SNYDER, JOHN OTTERBEIN :

Descriptions of new genera and species of fishes from Japan and the Riu Kiu islands, II: *U. S. National Museum, Proceedings*, 40; May, 1911.

STARKS, EDWIN CHAPIN :

(With Mann, W. M.) New and rare fishes from Southern California: *University of California, Publications in Zoology*, v. 8, No. 2; July, 1911.

Osteology of certain scombroid fishes. Stanford University, 1911: *Leland Stanford Junior University, Publications. University Series*, No. 5.

A possible line of descent of the gobioid fishes: *Science*, 33; May, 1911.

Results of an ichthyological survey about the San Juan Islands, Washington: *Annals of the Carnegie Museum*, v. 7, No. 2; 1911.

TERNAN, LEWIS MADISON:

Medical inspection of schools in California: *Psychological Clinic*, 5; May, 1911.

The relation of the manual arts to health: *Popular Science Monthly*, 78; June, 1911.

A school where girls are taught home-making: *Craftsman*, 20; April, 1911.

Some paradoxes of personality: *Out West*, n. s. 1; February, 1911.

TOWNLEY, SIDNEY DEAN:

Reports of earthquakes: *Seismological Society of America, Bulletin*, 1; March, 1911.

The Seismological Society of America: *ibid.*; March, 1911.

The solar conference: *Astronomical Society of the Pacific, Publications*, 22; August-October, 1910.

Variation of latitude: *ibid.*, 22; August-October, 1910.

TREAT, PAYSON JACKSON:

Awakened orient: *Rollins Magazine*; July, 1911.

The national land system; 1785-1820. New York. E. B. Treat & Co. 1910.

Stanford commencement: *Stanford Sequoia*, 20; May, 1911.

Four editorials on far eastern politics: *San Francisco Chronicle*; 1911.

Series of articles on Japan, China, the Philippines, Dutch East Indies: *ibid.*; April 16, 23, 30; May 7, 1911.

China under the Empress Dowager, by Bland and Backhouse, (review): *The Dial*, 49; December, 1910.

Colonial precedents of our national land system, by A. C. Ford, (review): *American Historical Review*, 16; January, 1911.

History of Sarawak under its two white rajahs, by Baring-Gould and Bampfylde (review): *Journal of Race Development*; January, 1911.

WILBUR, RAY LYMAN:

Abnormal body temperatures in injuries of the cervical spinal cord: *California State Journal of Medicine*; April, 1911.

Relation of the nervous mechanisms of the heart to drug effects as indicated by experiments on the terrapin: *Journal of American Medical Association*; June, 1911.

Should there be two degrees in medicine? *American Academy of Medicine*; June, 1911.

WOODWARD, FREDERIC CAMPBELL:

Education of a lawyer: *California Bar Association, Proceedings*; 1910.

YOUNG, STEWART WOODFORD:

Mechanical stimulus to crystallization I: *Journal of American Chemical Society*, 33; February, 1911.

ZINSSER, HANS:

(With Johnson, W. C.): On heat-sensitive anticomplementary bodies in human blood serum: *Journal of Experimental Medicine*, 13; January, 1911.

(With McCoy and Chapin) On the protective influence of leucocytic substances upon experimental plague infection in rats: *Journal of Medical Research*, 24; June, 1911.

On the toxic action of certain normal sera and its relation to anaphylaxis: *Journal of Experimental Medicine*, 14; July, 1911.

(With Vogel, K. M.,) tr.: Rudolph Schmidt's Pain; its causation and diagnostic significance in internal disease; 2d rev. ed. Phila. Lippincott, 1911.

(With Hiss, P. H., Jr.) A text-book for students and practitioners of medicine. New York, Appleton, 1910.

During the year a portrait of President Jordan was painted by a distinguished artist, Mrs. Emma Curtis Richardson of San Francisco. This portrait was presented by the Alumni Association to the University, and is now hung in the Library.

The customary reports by executive heads of departments, chairmen of committees, and other officers will be found attached.

Respectfully submitted,

DAVID STARR JORDAN,

December 31, 1911.

President.

APPENDIX I

DEPARTMENTAL REPORTS

GREEK.

For the year 1910-1911 the department faculty consisted of Augustus T. Murray, professor; Ernest Whitney Martin, assistant professor, and Blanch Rible, assistant. One course was also given by Associate Professor Elmore, and one by Mr. Knowlton, of the Department of Latin.

The following courses were given, with the attendance noted :

INSTRUCTOR	COURSE	Hours	Attendance	
		Week-ly	1st Sem.	2nd Sem.
Murray	7.	2	39	.....
Murray	9.	3	4	.....
Murray	10.	3	.....	4
Murray, Martin	12b.	1-3	.....	8
Murray	13.	4	.....	5
Murray	14.	2-6	4	5
Murray	15.	2-4	3	3
Murray	16.	2	34	.....
Martin	17.	2	.....	99
Martin	1.	5	6	5
Martin	4.	2	3	5
Martin	12.	2	6	6
Elmore	2.	3	4	.....
Knowlton	3.	3	.....	2
Knowlton	5.	3	2	.....
			105	142

Dr. Martin also gave two courses in the Department of Latin.

During the year an attempt was made to enhance the value of the work of the first two years by adapting the instruction, as far as possible, to the needs of the individual student. This proved most successful, and it has been made the settled policy of the department.

The contribution toward the support of the American School at Athens was again paid out of department funds. It is earnestly hoped that the University may see fit to assume this obligation.

AUGUSTUS TABER MURRAY,
Professor of Greek.

LATIN.

The year 1910-11 was marked by the absence on leave of Professor Fairclough as professor in (and for a time acting director of) the American School of Classical Studies at Rome. Instruction in the Department was given by Associate Professor Jefferson Elmore, Assistant Professor Benjamin O. Foster, Instructor Philip A. Knowlton, and Assistant Esther J. Spencer, with the co-operation of Assistant Professor E. Whitney Martin of the Greek Department, and of Professor George Hempl of the Department of Germanic Languages. Professor Martin's work in the department averaged three hours a week each semester. Courses in Greek of an equivalent number of hours were given by Professor Elmore and Instructor Knowlton. Professor Hempl lectured two hours a week each semester on his discoveries in the Italic dialects.

There were 42 major students enrolled in the department. Of these 13 were graduates, 6 receiving the A. M. degree.

The following is a list of the courses given during the year, with the attendance in each:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Elmore	Introductory	3	8	6
Spenser	Cicero and Virgil.....	3	8	6
Elmore	Terence, Cicero and Horace.....	3	11	10
Foster	Terence, Cicero and Horace.....	3	8	7
Knowlton	Justinian	2	10	13
Martin	Prose Composition I.....	2	20	16
Martin	Horace, Satires and Epistles.....	3	9	.....
Foster	Livy and Tacitus.....	3	.....	7
Foster	Prose Composition II.....	2	16	16
Foster	Roman Comedy.....	2	8	.....
Foster	Cicero's Letters.....	2	.....	9
Knowlton	Pliny and Seneca.....	2	9	.....
Knowlton	Lucretius	2	.....	6
Knowlton	Juvenal and Martial.....	2	8	.....
Foster	Teachers' Course.....	2	14	.....
Elmore	Cicero's Philosophical Works	2	.....	3
Knowlton	Seminary: Cicero's Letters.....	2-6	8	9
Elmore	Roman Elegy.....	2	.....	6
Foster	Latin Epigraphy.....	2	.....	10
Martin	Venetic	2	5	.....
Hempl	Etruscan	2	.....	6
Hempl	Latin Palaeography	1	7	.....
Foster	Roman Private Life.....	2	38	.....
Knowlton	Roman History	2	.....	46
Elmore			187	176

JEFFERSON ELMORE,
Associate Professor of Latin.

GERMAN.

During the academic year 1910-11 the teaching staff of the department consisted of George Hempl and James Owen Griffin, professors; Karl G. Rendtorff and William Alpha Cooper, associate professors; Macy Millmore Skinner, assistant professor; Bruno Boezinger and Herman Hilmer, instructors; Mrs. N. Hilmer, assistant.

There were registered in the department during the year 65 major students, of whom 8 were graduates and 57 undergraduates. Of the graduate students, 3 were candidates for higher degrees, and at the close of the year the degree of Master of Art was conferred upon Mary Acheson, Florence Mildred Bowes and Lillie Belle Eygabroad.

The following is a tabular statement of the number of the students pursuing the various courses:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cooper, Skinner, Hilmer, Hempl, Griffin, N. Hilmer, Skinner, H. Hilmer	1. Elementary	5	76	69
Boeizinger	2a. 2d-Year Reading.....	3	140	129
Griffin, Cooper, Boeizinger	2aa. Scientific Reading	3	42	40
Griffin, Rendtorff	2b. 2d-Year Composition	2	79	59
Griffin	3. Classical Drama	3	44	29
Skinner	4. Modern Drama	2 or 3	28	26
Hempl	5. Modern Novel	2 or 3	49	39
Boeizinger, Hilmer	6. Advanced Grammar.....	2	12	11
Boeizinger	7. Composition	2	36	29
Skinner	8. Advanced Composition	2	15	9
Cooper	10. Schiller	3	14	9
Rendtorff	11. Goethe	3	24	14
Hempl	13. History of Literature.....	2	11	7
Rendtorff	14. Teaching of Modern Languages	2	.....	16
Rendtorff	16. Middle High	2	12	5
Boeizinger	16b. Advanced Middle High.....	3	3	3
Rendtorff	17. Old High	2	1	1
Hempl, Rendtorff, Skinner, Cooper.....	21a. History German Civilization	2	8	7
	23. Thesis Work	2	8	2
			602	504

GEORGE HEMPL,
Professor of Germanic Philology.

ROMANIC LANGUAGES.

During the year 1910-11 the teaching staff of the department consisted of John Ernst Matzke (died September 18, 1910), Associate Professors Oliver Martin Johnston and Colbert Searles, Assistant Professors Clifford Gilmore Allen, Albert Léon Guérard, Aurelia Macedonia Espinosa, Acting Instructor Charles Alexandre Guérard, Assistants Frederick Pope Anderson and Henry Haxo. The two latter were emergency assistants appointed for the first semester in response to a special request on account of large elementary classes.

In addition Mrs. Sophie Boezinger (died July 17, 1911) and Mr. Le Roy Hamilton Stanton assisted in the correction of exercises, and Miss Alice Chapman had general supervision of the phonograph work.

The following table shows the courses given during the year, and the registration in each:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
C. A. Guérard, Anderson, Haxo	1a. Elementary French	3	83	80
C. A. Guérard..	1b. Elementary French, Read- ing Course	3	18	16
C. A. Guérard..	2. 2d-Year French Composition	2	13	10
Allen, C. A. Guérard, A. L. Guérard....	3. Modern French Reading.....	2	98	82
A. L. Guérard....	4a. French Conversation	1	12	9
Searles	4b. French Pronunciation	1	9	7
A. L. Guérard....	5. Reading and Writing of French	3	12	7
A. L. Guérard....	6. Advanced French Prose Composition	2	8	6
Searles	7. Outline Course in the His- tory of French Literature..	3	12	11
Searles	8. Classical French.....	3	20	17
Searles	9. History of French Literature in the Nineteenth Century	2	10	8
A. L. Guérard....	10. Jean-Jacques Rousseau.....	2	5	.....
Allen, Espino- sa, Haxo.....	12. Elementary Spanish	3	137	104
Allen	13. 2d-Year Spanish Composi- tion	2	19	17
Espinosa	14. Modern Spanish Reading.....	2	37	34
Espinosa	15a. Spanish Conversation	1	17	16
Allen	15b. Spanish Pronunciation	1	5	2
Espinosa	16. Advanced Spanish Composi- tion	2	6	5
Allen	17. Classical Spanish	2	18	12
Johnston	19. Elementary Italian	3	11	7
Johnston	20. Advanced Italian	2	7	6
A. L. Guérard....	24. Alfred de Vigny	3	5	.....
Johnston	25. Introductory to the Study of Old French	2	2	.....
Johnston	26. French Historical Grammar	2	2	2
Johnston	27. Old French Literature.....	2	.....	2
Johnston	28. Floire et Blancheflor.....	3	.....	2
			566	462

There were registered in the department during the year 36 major students, of whom 4 were graduates. Of this number 8 received the degree of A. B. and 1 the degree of A. M.

The sudden death of Professor Matzke, near the beginning of the academic year, made necessary a number of changes in the arrangement of the courses of the department. During the ten days between the opening of the University and his departure for the City of Mexico he organized his classes and began the work of the semester. The courses begun by him were continued by other members of the department. The course on the History of French Literature in the Nineteenth Century was given by Professor Searles, the one on Alfred de Vigny by Professor Guérard, and the courses in Old French by Professor Johnston. It was obviously necessary that those taking up the work just mentioned should be relieved of some of their own classes. This need was met by the appointment of Mr. C. A. Guérard as acting instructor.

Toward the end of the year Mr. Robert Edouard Pellissier was appointed instructor in the place of Mr. C. A. Guérard, whose appointment expired with the end of the academic year. Mr. Pellissier received the degree of S. B. (1904) and that of A. M. (1909) at Harvard University, and during the past year he has pursued advanced studies in the same university.

OLIVER MARTIN JOHNSTON,
Associate Professor of Romanic Languages.

ENGLISH LITERATURE AND RHETORIC.

The faculty of the department consisted of Professor Alphonso Gerald Newcomer, Associate Professor Raymond MacDonald Alden, Assistant Professors Lee Emerson Bassett, Henry David Gray, William Dinsmore Briggs, Instructors John Kester Bonnell, Theresa Peet Russell, Everett Wallace Smith, Edith Ronald Mirrielees. Assistant Professors Seward and Hall spent the year in Europe on sabbatical leave, and Mrs. Evelyn Wight Allan, Dean of Women, conducted one of Professor Seward's courses. Student Assistants were Bruce O. Bliven, Miss Elizabeth L. Buckingham, Miss Lillie M. Rible and Russell O. Stidston.

In March Dr. Alden resigned, having accepted a call to the headship of the Department of English at the University of Illinois. In May Instructor Bonnell resigned to accept an instructorship at the University of Wisconsin.

The number of major students registered in the department was 153, of whom 5 were special students and 19 graduates. Thirty-eight students were given the degree of A. B., and five (including those in English Philology) the degree of A. M.

Report of the President

29

Following is a table of the courses given, with the enrollment in each. In addition to these, Dr. Briggs gave a course in the Department of English Philology.

INSTRUCTOR	*COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Mirrielees	a. Elementary Compositions (4 sections)	1	154	77
Bassett	1a. Voice (3 sections)	1	116	66
Bassett, Bonnell	1b. Vocal Expressions (3 sections)	2	67	24
Bassett, Bonnell	1c. Extemporaneous Speaking..	2	20	24
Briggs, Newcomer, Russell, Smith.....	2. Composition (4 sections).....	2	205	227
Newcomer	4. Modern English	2	.....	78
Russell	5. English Classics	3	108	123
Gray	6. Introduction to Poetry.....	3	80	.....
Bonnell	6a. Tennyson	3	.....	131
Alden	9. English Bible	3	.....	30
Newcomer	10. Shakespeare	2	41	48
Gray	10a. Shakespeare	3	.....	50
Bassett	14. Vocal Interpretation	2	24	18
Bassett, Bonnell	15. Public Speaking (2 sec.).....	2	34	14
Bassett	16. Vocal Expression (2 sec.)....	2	.....	46
Russell	21. Advanced Composition	2	28	31
Smith	22. News Writing	3	47	33
Gray	23. Narration	2	9	14
Briggs	24. Argument	2	27	26
Allan	28. Teachers' Course in Eng.....	2	16	13
Briggs	30. Chronological Outline	2	.....	27
Briggs, Allan.....	32. Hist. of Mod. Eng. Lit.....	3	22	22
Alden	33. Early 19th Century Lit.....	3	10	.....
Gray	34. Contemporary Poetry	3	.....	32
Gray	37. Elizabethan Drama	3	.....	25
Alden	39. Prosody	2	.....	18
Newcomer	42. Milton	3	48	.....
Briggs	48. Ben Johnson	2	10	5
Alden	52. Theory of Poetry.....	2	.....	6
Newcomer	55. Shakespeare (Hamlet).....	2	.....	19
			1066	1227

ALPHONSO GERALD NEWCOMER,
Professor of English.

ENGLISH PHILOLOGY.

During the academic year 1909-10 Dr. William Dinsmore Briggs, of the Department of English Literature and Rhetoric, conducted the elementary course in Old English, and, as before, I wish to express my obligations to him for his faithful and successful assistance, which has enabled me to concentrate more energy on the advanced work of the department.

The most important work of the department was the research course, which was particularly intended to give the future teachers of English some practice in the independent working out of fresh material in the line of philological investigation. The term "philology" was taken in its fullest and broadest sense. The work during the first semester was devoted to a History of Lexicography; the second semester was devoted to special studies in English word history and terminology.

The following is a list of the courses given during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Briggs	1. Old English	3	23	.....
Flügel	2. Chaucer (elementary)	2	51	.....
Flügel	3. History Early English Lit- erature	3	32	.....
Flügel	4. Middle English	2	10	.....
Flügel	7. Middle English Grammar....	2	.....	10
Flügel	11. Research	2	7	8
Flügel	8. Chaucer (advanced)	2	.....	34
Flügel	9. Ballads	2	.....	19
			123	71

EWALD FLÜGEL,

Professor of English Philology.

DEPARTMENT OF PHILOSOPHY.

During the year the department comprised Dr. Henry W. Stuart, professor; Dr. Addison M. Moore, acting professor; Dr. George H. Sabine, assistant professor; and Florence M. Woodhead, assistant. Dr. Sabine was absent on leave and spent the year as a member of the faculty of the Sage School of Philosophy in Cornell University. Dr. Moore's courses in the department during the second semester were cordially appreciated by all who availed themselves of the opportunity they offered.

The following were the courses offered, with the attendance :

INSTRUCTOR	COURSE	Unit Value	Registration	
			1st Sem.	2nd Sem.
Stuart	1. El. Logic	3	31	.....
Stuart	2. El. Ethics	3	14	.....
Moore	3a. Modern Philosophy	3	.....	44
Stuart	6. Adv. Logic	3	.....	19
Stuart	7. Practical Ethics	3	.....	10
Moore	8a. Evolution and Philosophy.....	3	.....	22
Stuart	9. Outlines of Gen. Philosophy	2	17	13
			62	108

HENRY W. STUART,
Professor of Philosophy.

PSYCHOLOGY.

The staff of instruction in the Department of Psychology for the year was: Frank Angell and Lillian J. Martin, professors; John E. Coover, assistant.

The course of instruction given and the attendance of students are tabulated below :

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Angell	1. Gen. Psychology	4	130	.....
Martin, Angell	2. Begin. Laboratory	3	18	20
Angell, Martin	3. Recognition	2	.....	3
Angell, Martin	4. Advanced Laboratory	3	3	3
Martin	5. Applied Psychology	4	39	.....
Martin	6a. Abnormal Psychology	2	.....	89
Angell, Martin	7. Current Psychol. Literature..	1	9	7
Martin	8. Psychol. of Thinking.....	1	.....	9
Angell, Martin	9. Research Work	1 to 8	2	3
			201	134

The evils of the large lecture courses have been the subject of comment in previous reports. On the other hand, it hardly seems right to shut students out of a course for which they are fitted and which they seem earnestly desirous of taking.

FRANK ANGELL,
Professor of Psychology.

EDUCATION.

The work of the department was carried on during the year 1910-11 by the following staff: Ellwood Patterson Cubberley, professor; Percy Erwin Davidson and Rufus Clarence Bentley, associate professors; Lewis Maddison Terman, assistant professor; Morris Elmer Dailey, lecturer; and Edward Samuel Evenden and Frances Elizabeth Short, assistants.

Professor Cubberley was absent the second semester of the year, acting as Lecturer on Education at Harvard University. All of his courses were dropped during his absence. Assistant Professors Davidson and Bentley were promoted to associate professorships during the year. Professor Bentley began his work as high school visitor during this year, and the good results of his visitations are already beginning to be evident. He spent the fall semester and the month of May in visiting high schools, and the second semester in class work at the University, all of his work here being in the field of secondary education. He is virtually a professor of secondary education, doing field work for a portion of each year. Mr. Evenden, who has organized the practice teaching during the past two years, leaves us to become head of the training school in the new Oregon Normal School, and Mr. Jesse Brundage Sears has been appointed as instructor to handle this work, and the work in the history of education formerly done by Professor Cubberley. Mr. George Archibald Clark has for the coming year been attached to the department as a lecturer on commercial education.

Report of the President

33

The following is the record of attendance in the several courses offered during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cubberley	1. Public Education in America	2	158	.....
Davidson	2. Educational Theory—Intro- ductory	2	.....	121
Cubberley	3. History of Education in Europe	2	44	.....
Terman	6. Educational Psychology	2	.....	17
Davidson	7. Social and Moral Education	2	29	23
Davidson	6. Logic of Education	2	13	9
Cubberley	9. City School Administration..	2	24	.....
Bentley	13. Secondary Education	2	.....	76
Terman	14. Literature of Adolescent Psychology	2	.....	33
Bentley	15. School Administration	2	.....	6
Bentley	16. Types of Secondary Schools	2	.....	10
Evenden	17. Method and Management.....	1	33	21
Evenden	18. Practice Teaching	4	22	18
Davidson	23. Elementary	2	9	.....
Terman	24. Literature of Child Psychol- ogy	2	20	.....
Terman	25. Psychology and Hygiene of Educational Method.....	2	20	.....
Davidson	27. Educational Theory	2	5	5
Terman	28. Physical Aspect of Child....	3	26	.....
Terman	29. School Hygiene.....	3	.....	37
Dailey	30. Training of Teachers	1	.....	7
Terman	34. Special	2 to 4	3	5
Cubberley	35. Seminary	2	11	.....
			417	388

The number of students enrolled as major students was 57, of whom 20 were graduates. Six of these completed their work for the M. A. degree, while one more will finish in September. This is the largest number of students enrolled in Education since the adoption of the present policy as to the taking of major students. The increase in major students is in large part due to the recent better rounding out of the special instruction within the department.

The growth of the department within the past five years may be seen from the following figures:

YEAR.	1906-7	1907-8	1908-9	1909-10	1910 11
Graduate students.....	7	4	8	8	20
Undergraduates	18	22	29	31	37
Total major students	25	26	37	39	57
Taking the A. B. degree.....	5	2	8	9	10
Taking the A. M. degree.....	.....	.....	2	4	6
Students, 1st Semester.....	245	257	301	415	417
Students, 2d Semester.....	275	243	411	417	388

Having a fairly well rounded course of instruction and a good corps of instructors, the department may be expected to show further increase in succeeding years.

ELLWOOD P. CUBBERLEY,
Professor of Education

HISTORY.

The faculty of the department for the year 1910-11 consisted of Professors Ephraim Douglass Adams, Arley Barthlow Shaw and Herbert Eugene Bolton; Associate Professor Edward Benjamin Krehbiel; Assistant Professors Henry Lewin Cannon and Payson Jackson Treat; and Instructor Percy Alvin Martin.

Professor Bolton has resigned to take the chair of American History at the University of California. Professor Edgar Eugene Robinson of Carleton College, Northfield, Minnesota, has accepted an assistant professorship of American History at Stanford University. Assistant Professor Treat has been promoted to an associate professorship. The student assistants of the year were Robert L. Duffus, William E. Dunn, Charles W. Hackett, Nora W. McCurdy, and Ruth E. Robertson.

Report of the President

35

The following is a list of courses given in 1910-11, with hours of credit and attendance for each semester:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Martin	1. Training	1	74	57
Show	3a. Middle Ages	3	65	.....
	3b. Middle Ages.....	..	.....	69
Cannon	4a. English History.....	3	206	.....
	4b. English History.....	..	.....	207
Krehbiel	5a. European History.....	2	92	.....
	5b. European History.....	..	.....	95
Adams	7. United States History	2	92	77
Bolton	8. Westward Movement.....	3	42	51
Treat	9. The Far East.....	3	94	140
Cannon	11. English Constitutional	2	39	46
Martin	10. France	2	10	10
Martin	12. History of Germany.....	3	13	14
Show	14a. Empire and Papacy.....	2	6	.....
Show	14b. The Church and State.....	2	.....	3
Krehbiel	15. Europe Since 1789.....	3	41	43
Show	16. Teachers' Course	2	31	26
Cannon	17. Current Historical Literature	1	9	22
Adams	18. Eng. and Am. in Civil War..	3	17	10
Bolton	19. History of Southwest	2	28	32
Jordan, Kreh- biel	20. International Arbitration.....	2	.....	153
Treat	21. Tropical Colonization	2	17	.....
Treat	22. History of Australasia	2	.....	19
Show	27. German Const. History.....	2	1	.....
Bolton	28. Southwest History	2	8	6
Cannon	29. Seminary in English Hist.....	2	9	10
Martin	30. Renaissance in Italy.....	2	7	7
Adams	31. American Diplomatic Hist....	2	10	10
Krehbiel	32. Seminary in Modern Euro- pean History	2	7	11
Adams	35. American-European Rela- tions	3	1	.....
Treat	36. Philippines Under Spain	2	5	3
	Thesis	Vari- ous.	9	9
			933	1130

Important work now in preparation by member of the staff for publication is as follows:

E. D. Adams: Editing the correspondence of British diplomatic agents in Texas during the time that State was an independent republic (1836-1846). The material comes from the Public Record Office, London, the cost of transcribing being borne by the Texas State Historical Society.

H. L. Cannon: Preparation of a transcript and extension of the treasury account known as the Great Roll of the Pipe for the twenty-sixth year of the reign of King Henry III, A. D. 1241-1242.

E. B. Krehbiel: (1) English translation of Achille Luchaire: *La Société Française au Temps de Philippe-Auguste*. (2) A study of the Great Interdict of England.

A course of lectures on International Conciliation was given this year in the Department of History by President Jordan and Professor Krehbiel. This course, covering the history of war, peace, armament, international law, arbitration, and judicial determination, is the first yet offered in any American university on this, the most important political movement of our time. The work was taken by 153 students, all belonging to the upper classes of the University.

The number of major students registered in the department for the year was 185, of whom 159 were undergraduates, 23 graduates and 3 specials.

The Master of Arts degree was conferred in May, 1911, upon four students:

Jessie Loring Cook—Thesis: Hubert De Burgh; a Study of the Period of Magna Charta.

Grace Maple Davis—Thesis: Anglo-Turkish Piracy in the Reign of James I.

Robert Luther Duffus—Thesis: Contemporary English Popular Opinion on the American Civil War.

Ruth Edna Robertson—Thesis: The Diaries of the Second and Third Expedition of Father Garcés. (Translated and edited.)

These theses are typewritten, bound and deposited in the University Library.

EPHRAIM D. ADAMS,
Professor of History.

ECONOMICS AND SOCIAL SCIENCE.

The work of the department for the year 1910-11 was carried on by Professor Burt Estes Howard, Associate Professors Albert Conser Whitaker and Harry Alvin Millis, and Instructor Ira Brown Cross.

The courses given and attendance were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cross	1. Elements of Economics.....	3	266	228
Whitaker	4. Money and Banking	3	68	41
Whitaker	6. Corporations and Trusts.....	2	49	28
Millis	8. Public Finance	3	12	.....
Millis	10. Labor Problems	3	29	.....
Millis	10a. Immigration Problems	3	.....	64
Cross	13. Socialism	3	46	.....
Cross	14. Economic History	3	.....	57
Millis	15. Am. Methods of Taxation..	3-5	.....	10
Whitaker	17. Value and Income	2	11	6
Millis	18. Principles of Economics.....	2	11	11
POLITICAL SCIENCE.				
Howard	30. Comparative Federal Gov't..	3	42	33
Howard	31. American Politics	3	112	.....
Howard	33. Parliamentary Government..	3	.....	37
Howard	34. Seminar in Polit. Science.....	2	17	12
			663	527

The number of major students registered during the year was 149, consisting of 8 graduates, 130 regular undergraduates, and 11 special students.

During the year Professor A. A. Young was absent on leave to give lectures on Economics at Harvard University. At the close of the year Professor Young resigned his position at Stanford to become Professor of Economics at Washington University, St. Louis, Missouri. Professor Young's resignation was followed by the appointment of Professor Alvin Saunders Johnson, of the University of Chicago, to be Professor of Economics at Stanford. Professor Johnson becomes executive head of the department for the year 1911-12. Associate Professor Whitaker was promoted to the rank of professor.

ALBERT CONSER WHITAKER,
Professor of Economics.

LAW.

The faculty of law for the year 1910-1911 consisted of Professors Frederic Campbell Woodward, Charles Henry Huberich, Arthur Martin Cathcart and Wesley Newcomb Hohfeld, and Associate Professors Charles Andrews Huston and Joseph Walter Bingham. The course in California Practice was again given by John Slater Partridge, Esq., of the San Francisco bar.

The registration of students in the law school was 124, of whom 45 were graduate students, 48 seniors in the pre-legal course and 31 special students. This is an increase of nearly 50 per cent over the registration for the year 1909-1910. The registration of students in the pre-legal course, excluding seniors who are counted as students in the law school, was 188, one less than the registration for the preceding year.

The courses of instruction given and the enrollment in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Dept. Faculty.....	a. Elementary Law	3	73	.....
Huston	1. Introduction to Law.....	2	.....	47
Huberich	2. Crimes	4	34	.....
Huberich	3. Constitutional Law	3-3	7	4
Huston	4. Municipal Corporations.....	2	.....	8
Woodward	10. Persons	2	21	.....
Bingham	11. Introduction to Prop.....	4-2	66	47
Bingham	12. Title to Land.....	4	31	.....
Bingham	16. Water Rights	3	.....	14
Bingham	17. Mining Law	2	.....	8
Cathcart	18. Torts	4-2	70	53
Cathcart	19. Quasi-Contracts	3	37	.....
Woodward	20. Contracts	3 3	85	71
Huberich	21. Bills and Notes	4	.....	33
Woodward	22. Sales	4	.....	29
Huston	23. Agency	4	.....	47
Huston	24. Partnership	3	18	.....
Huston	25. Private Corporations	4	19	.....
Hohfeld	31. Equity 1.....	4	.....	45
Hohfeld	32. Trusts	4	24	.....
Cathcart	35-37. Pleading	4	.....	25
Hohfeld	38. Evidence	3-3	19	19
Partridge	39. California Practice	2	.....	23
			504	473

For the first time in the history of the law school a summer term was held. It opened on May 31st and continued for eight weeks, enlisting the services of Professors Woodward, Cathcart, Huston and Bingham. The attendance was thirty, most of whom were regular students in the law school who welcomed the opportunity to shorten the period of their preparation for the bar. The enthusiasm and diligence of the students were most gratifying, and it is believed that if the experiment is repeated the attendance will be considerably larger.

The total number of volumes in the law library on August 1, 1910, was 14,452. During the period from August 1, 1910, to July 31, 1911, 732 volumes were added. Of these, 622 were acquired by purchase, 25 by gift and 85 by binding. The total number of bound volumes in the library on July 31, 1911, was 15,184. Perhaps the most notable addition to the library was the collection of the consolidated statutes of all the States, commenced last year but not yet complete. The completion of this collection and the appointment of a librarian who can devote all of his time to the care and conservation of the library and the completion of an adequate card catalogue are the most urgent needs of the library.

FREDERIC CAMPBELL WOODWARD,

Professor of Law.

GRAPHIC ART.

The personnel of the department faculty was as follows: Arthur Bridgman Clark, associate professor; Robert Barthlow Harshe, assistant professor; Mrs. Chloe Lesley Starks, instructor, and Miss Harriet Park, assistant.

Last year, as during the preceding year, the working rooms of the department have been greatly crowded. The only way to meet this difficulty seems to be a limitation of registration to the capacity of small classrooms.

No radical changes have been made in our courses of instruction, but the demands now made upon teachers in the public schools cause us to emphasize applied rather than pictorial art.

Exhibitions of paintings of art objects have been held as follows:

Paintings, landscape and figure subjects, loaned by the National Federation of Arts of Washington, D. C.

Paintings by Arthur F. Mathews of San Francisco.

Paintings by Mrs. Chloe Lesley Starks of Stanford University.

Embroideries from the Deerfield Society of Blue and White Needle Work.

Embroideries from Newcomb College of Tulane University, New Orleans.

The exhibitions of embroideries were made possible through the interest and courtesy of Mrs. Ellen Coit Elliott of Stanford University.

During the year Professor Harshe has made a number of mural paintings for the permanent decoration of the Stanford University Book Store, using the Santa Barbara Mission as a theme. Professor Harshe will, during a leave of absence for the coming year, select and secure paintings for the International Pacific-Panama Exposition both in this country and in Europe.

Mrs. Starks has painted many landscapes in water color and pastel, and gave an exhibition of her work in May. This comprised several local subjects and was deservedly appreciated.

During the year the following courses of instruction were given:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Starks	1. Elementary Still-Life	2-4	36	33
Harshe	2. Cast Antique	2-4	10	11
Harshe	3. Head from Life	2-5	18	14
Harshe	4. Color	2-4	10	3
Clark	5. Landscape	3	20	.....
Clark	6. Lectures	2	47	35
Clark	7. Organic Form	2-5	.....	15
Clark	8. Perspective	2	.....	28
Starks	9. Science Illustration	2	5	.....
Clark	11. Design	3-5	16	13
Harshe	12. Illustration	2-5	1	8
Harshe	13. Handicraft	2-4	11	13
			174	173

ARTHUR BRIDGMAN CLARK,
Associate Professor of Graphic Art.

MATHEMATICS.

The instructing body was composed of Robert Edgar Allardice and Rufus Lot Green, professors, and Hans Frederik Blichfeldt, associate professor.

The program of work was as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Blichfeldt	1. Trigonometry	2	24	.....
Blichfeldt	2. Solid Geometry	2	.....	13
Green	3. Algebra	5	70	.....
Green	4. Co-ord. Geometry.....	5	.....	36
Allardice	6. Plane Geometry	2	9	11
Blichfeldt	7. General Course	3	28	25
Allardice	9. Calculus	3	14	12
Green	10. Adv. Co-ord. Geometry.....	2	4	3
Allardice	11. Adv. Calculus	3	4	.....
Allardice	12. Theory of Functions.....	3	.....	4
Green	14. Mod. Co-ord. Geometry.....	2-3	.....	2
Blichfeldt	15. Diff. Equations	3	9	8
Allardice	16. Theory of Functions	2	2	.....
Blichfeldt	20. Theory of Groups	2-3	1	1
Allardice	21. Projective Geometry.....	2	2	2
			167	117

ROBERT EDGAR ALLARDICE,
Professor of Mathematics.

APPLIED MATHEMATICS.

During the year 1910-11 the active instructing force of the department was constituted as follows:

Professor Leander Miller Hoskins, Associate Professors Halcott Cadwalader Moreno and Sidney Dean Townley, Assistant Professor Ernest William Ponzer, and Instructor George Francis McEwen. Assistant Professor William Albert Manning spent the year in Europe on leave of absence. The following assistants were employed during the year: J. W. Armstrong, M. C. Ayers, E. P. Bly, H. C. Burbridge, A. E. Smothers, W. H. Thomas.

The courses of instruction given, with the enrollment in each, are shown in the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
McEwen	a. Solid Geometry	2	17	-----
McEwen	b. Trigonometry	3	-----	23
Ponzer, Mc- Ewen	1. First-year Mathematics	5	129	109
Moreno, Town- ley, Ponzer....	2. Calculus	3	92	86
Hoskins, Mo- reno, Townley	3. Theoretical Mechanics	5	95	83
Townley	5. General Astronomy	3	22	-----
	5a. Practical Astronomy	3	-----	28
Moreno	6. Graduate Course	3	1	1
Hoskins	*3a. Hydraulics	3	-----	63
	*3b. Hydraulic Motors	3	17	-----
			373	393

*Scheduled under Engineering.

LEANDER MILLER HOSKINS,
Professor of Applied Mathematics.

CHEMISTRY.

The teaching staff in the Department of Chemistry for the year 1910-11 consisted of Professors John Maxson Stillman, Lionel Remond Lenox, Edward Curtis Franklin, Stewart Woodford Young, Associate Professor Robert Eckles Swain, Assistant Professor John Pearce Mitchell, Instructor William Henry Sloan, Acting Instructors Thomas Buck Hine, Paul Hermann Waldruff, Assistants Alice Ruth Berger (second semester), George Shambaugh Bohart, Thomas Meredith Cramer, Robert John Cross, Louis Dunshee Elliott, Arthur Henry Myer, William Edward Perdew, Ralph Edward Sanborn, Harry Johnson Sears.

During the absence in the second semester of the executive head, Professor L. R. Lenox acted as executive head of the department.

Professor E. C. Franklin has accepted for two years the position of Professor of Chemistry in the Hygienic Laboratory of the Bureau of Public Health and Marine Hospital Service at Washington, D. C., and is granted two years' leave of absence for that purpose.

Instructors T. B. Hine and P. H. Waldruff having resigned at the end of the year, Mr. H. J. Sears (Stanford, '11) was appointed instructor in general inorganic chemistry, and Miss Alice R. Berger (Stanford, '08) was appointed acting instructor, for the ensuing year.

Mr. George S. Bohart (Stanford, '11) was appointed instructor for the ensuing year to assist in organic chemistry during the absence on leave of Professor Franklin.

Attendance in various courses, Department of Chemistry, for year 1910-11:

LECTURE COURSES.

INSTRUCTOR	COURSE	Units per Week		Attendance	
		1st Sem.	2nd Sem.	1st Sem.	2nd Sem.
Mitchell	*1. General Inorganic	2	2	110	95
Mitchell	*1. General Inorganic	3	2	48	38
Stillman	†2. Principles	3	..	30	.....
Swain	†2. Principles .....	..	3	.....	32
Franklin	*3. Organic	2	2	20	18
Stillman	24. Industrial	2	..	11	.....
Lenox	†6. Qualitative Analysis	1	1	26	34
Franklin	*7. Advanced Organic	2	2	9	8
Young	*8. Physical Chemistry	3	3	11	9
Young	†10. Applied Physical .....	..	2	.....	20
Swain	†11. Physiological	3	..	6	.....
Stillman, Franklin	*12. Seminary	1	1	9	14
Stillman	†x. Special Reading.....	2-3	..	2	.....
Swain	†3a. Medical Physiological .....	..	3	.....	15
	Totals			282	283

*Courses continuing throughout the year.

†Courses completed in each or either semester.

LABORATORY COURSES.

INSTRUCTOR	COURSE	Unit Hours per Semester	Attendance	
			1st Sem.	2nd Sem.
Mitchell, Wald- raff, and As- sistants Cra- mer, Elliott and Perdew.....	A1. General Inorganic	2	42	.....
Lenox, Hine.....	A2. General Inorganic	2	66	48
Franklin, Bo- hart	b. Qualitative Analysis	3	24	34
Sloan	c. Organic Preparations	3	3	15
Lenox, Sloan....	d. Qualitative Analysis	3-4	31	20
Young, Cross....	e. Mineral Analysis	3-4	2	6
Swain	f. Physical Chemical Measure- ments	3-5	2	.....
Lenox, San- born	g. Physiological Chemistry.....	3	7	.....
Young	h. Assaying	3	15	15
Lenox	i. Physical Chemical Labora- tory	2-3	1	2
Franklin	x. Advanced, Special or Re- search	2-5	2	2
Young	x. Advanced, Special or Re- search	3-8	3	5
Swain	x. Advanced, Special or Re- search	3-5	1	.....
		3-4	5	4
			204	151

All laboratory courses arranged to be completed in one semester.

Work of research carried on during the year was as follows:

Professor Franklin continued his investigations on reactions in liquid ammonia.

Professor Young continued his investigations on the super-cooling and super-fusion phenomena. He has also developed a process for the removal of sulphur dioxide from smelter fumes, a method now being tested on a commercial scale.

Professor Swain completed his investigations on the effects of sulphured fruits on the human organism and his report is now in the hands of the Government officials. He was also engaged with Professor Peirce

of the Department of Botany and Assistant Professor Mitchell of this department in continuation of the study of the effects of sulphur dioxide on various living plants.

Assistant Professor Mitchell, in addition to the work above mentioned, is continuing his examination of sources of water supply on the San Francisco peninsula.

Instructor Sloan has continued his series of analyses of certain mineral waters of the State, results of which will eventually appear in the publications of the United States Geological Survey.

Instructor Hine studied, under direction of Professor Franklin, certain thallium reactions in liquid ammonia.

Instructor P. H. Waldraff made a study of the composition of a Pacific Coast lepidolite and accompanying tourmaline, under direction of Professor Lenox.

Mr. H. J. Sears, under direction of Professor Franklin, prepared and studied a potassium compound of "saccharine."

Mr. R. J. Cross was associated with Professor Young in the study of super-cooling phenomena, and the results have been published in the Journal of the American Chemical Society.

Mr. A. H. Meyer, under direction of Professor Swain, studied the utilization of starch by the animal organism.

Mr. George S. Bohart was engaged in the study of nickel and cadmium ammono compounds, under direction of Professor Franklin.

Mr. B. D. Shoemaker was engaged in the investigation of ammonia crystallization of various inorganic and organic compounds, under direction of Professor Franklin.

Mr. C. M. Fulkerson and Mr. A. H. Myer studied, under Professor Swain, the effects of thallium compounds on the animal organism.

Mr. F. F. Fitzgerald completed the requirements for the degree of Doctor of Philosophy.

JOHN MAXSON STILLMAN,
Professor of Chemistry.

PHYSICS.

The teaching faculty of the Physics Department for the year 1910-11 consisted of Professor Fernando Sanford, Associate Professor Frederick J. Rogers, Assistant Professor Elmer R. Drew, Instructor Perly A. Ross and Assistants Shirley Hyatt, Albert E. Caswell, Harry C. Burbridge and George W. Moffitt. Assistant Professor Joseph G. Brown was absent on sabbatical leave throughout the year.

The total registration of major students was 13, of whom 7 were graduates and 6 undergraduates. Two bachelor's, one master's and three doctor's degrees were given in the department.

The courses, with the enrollment in each for the year, are found in the course, are shown in the following table:

INSTRUCTOR	COURSE	Lecture Hours		Laboratory Hours		Attendance	
		1st Sem.	2nd Sem.	1st Sem.	2nd Sem.	1st Sem.	2nd Sem.
Rogers, Ross, Burbridge, Hyatt.....	1. Dynamics	1	1	5	2	22	14
Drew, Hyatt.....	2. Electricity and Mag.	1	---	3	---	9	---
Sanford, Hyatt	3. Heat	---	1	---	2	---	3
Sanford, Burbridge	5. Elementary Optics	---	---	2	3	1	8
Drew, Caswell, Rogers, Moffitt	6. Engineering Physics	3	3	3	3	35	32
Sanford, Hyatt, Drew, Caswell	7. Physics for Medicine	2	2	2	2	22	16
Rogers, Moffitt	9. Electrical Meas.....	1	---	5	---	26	---
Rogers	9a. Photometry and Illumination	---	---	---	1	---	4
Sanford	10. Adv. Optics.....	---	---	---	2	---	2
Drew	12. Analytic Mechanics	4	---	---	---	1	---
Sanford	13. Teachers' Physics..	1	1	---	---	8	8
Rogers	16. Kinetic Gas Theory	---	2	---	---	---	1
Sanford	19. Investigation	---	---	1-10	2-5	4	7
Sanford	20. Physical Theory of Elect	---	1	---	---	---	6
						128	101

FERNANDO SANFORD,
Professor of Physics.

GENERAL BOTANY.

The personnel of the department for the academic year 1910-11 was as follows: Professor Douglas Houghton Campbell, Professor George James Peirce, Assistant Professor Leonas Lancelot Burlingame, Acting Instructor J. I. W. McMurphy, and Miss H. D. M. Jolivette, Miss J. D. Randall, student assistants.

The courses, with the enrollment in each for the year, are found in the accompanying table:

INSTRUCTOR	*COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Campbell, Peirce, Bur- lingame	1. Elementary	3-3½	36	33
Campbell	2. Algae	5	4	....
Campbell	3. Archegoniatae	5	....	3
Peirce	5. Physiology	3	10	....
Peirce	7. Physiology	1	15	....
Burlingame	10. Technique	3	3	....
Campbell, Peirce	12. Investigation	2-5	2	....
			70	36

*With the exception of courses 7 and 8, all courses in this department are laboratory courses with one lecture a week.

Miss Jolivette was unable to reach the University for the first semester, and her place was filled by Miss Florence Williams.

The members of the staff have been engaged during the year in various lines of scientific work.

Professor Campbell has completed two volumes—one entitled "Plant Life and Evolution," shortly to appear from the press of Henry Holt & Company; the second volume, "Comparative Morphology of the Eusporangiateae," is published by the Carnegie Institution of Washington. Several shorter papers have been published, including a summary of the work on the development of the screw-pine (*Pandanus*), published in the "Annals of Botany."

Professor Peirce, on leave of absence, spent the second semester in the University of Wisconsin, where he took the place of Professor R. A. Harper, who was absent at the same time. While at Madison Professor Peirce was occupied with a microscopic study of plants injured by smelter smoke. This work was done in connection with Professor Peirce's former work in the study of the effects of smelter smoke on vegetation, made in conjunction with Professor Swain of the Department of Chemistry. The results of these investigations will furnish the fullest account yet made on this important subject, and will be published by the Federal Government.

Assistant Professor Burlingame has continued his studies on *Aran-caria*, which promise interesting results.

Miss Jolivette is engaged upon a series of experiments with certain fungi in connection with her thesis for the Ph. D. degree. This work will be continued during the next year.

The University has suffered a great loss in the recent death of Professor Dudley, associated with the University since 1893. To his labors we owe the fine herbarium, which is of great value and will remain as a monument to his devotion to his chosen science. Those who had the good fortune to come into contact with him, whether as pupil or colleague, will always remember him as an enthusiastic and inspiring teacher, absolutely devoted to the interests of his students. Moreover, his influence extended beyond the University, and his intense interest in, and his devoted labors for the cause of forestry were widely appreciated. By his death not only does the University lose a distinguished teacher but the State must mourn one of its most useful citizens.

Beginning with the academic year 1911-12 the two departments of Botany will be merged into one. Assistant Professor Abrams has been advanced to the rank of Associate Professor of Systematic Botany and will have charge of the Herbarium.

DOUGLAS HOUGHTON CAMPBELL,
Professor of Botany.

SYSTEMATIC BOTANY.

The instructing body of the department for the academic year 1910-11 consisted of Professor William Russell Dudley, Assistant Professor LeRoy Abrams and Acting Instructor James Ira Wilson McMurphy. The Herbarium assistants were Josephine D. Randall, Louis George Steck, Lucy Youse and Arthur Dickie Borden. The two last were for the second semester only.

Professor Dudley retired from active duties at the end of the first semester and was elected emeritus professor of botany by the Board of Trustees.

The courses of instruction given and the enrollment in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Abrams, Mc-Murphy	1. Spermaphyta	3	9	14
Abrams, Mc-Murphy	2. Geographical Distribution and Forest Botany	3	..	5
Dudley, Mc-Murphy	3. Fungi	4	8	....
Abrams	4. Elementary Taxonomy	2	..	9
Abrams	5. Compositae	2	7	....
Dudley	6. Advanced Fungi.....	2 or more	1	1
Dudley, Abrams	8. Phytogeography	2 or more	1	1
Dudley, Abrams	10. Graduate Work .....	.....	2	2
			—	—
			28	32

Miss Lucy Youse, a candidate for the Master's degree, completed a preliminary paper on the plant formations of Palo Alto and vicinity.

Miss Josephine Randall, in co-operation with Professor Dudley, continued her studies of the flora of the Monterey Peninsula.

Mr. McMurphy continued his studies of the *Madieae*, and also carried on some preliminary culture experiments with *Synchytrium*.

Assistant Professor Abrams published in the Bulletin of the New York Botanical Garden a paper comprising a phytogeographic and taxonomic study of the Southern California trees and shrubs, which embodied the results of several years' work. He also published a supplemented edition of his book on the "Flora of Los Angeles and Vicinity."

THE DUDLEY HERBARIUM.

Upon Professor Dudley's retirement he presented his entire botanical collections to the University. As an appreciation of this generous gift the Board of Trustees named the University herbarium in his honor. These collections, numbering approximately 50,000 sheets, principally of unmounted specimens, are especially rich in Sierra Nevada plants.

The mounted collections were increased by 4,177 sheets during the year and now total 34,981. The unmounted collections are estimated at 120,000.

LEROY ABRAMS,

Associate Professor of Botany.

PHYSIOLOGY AND HISTOLOGY.

The teaching force of the department for the year consisted of Oliver Peebles Jenkins and Frank Mace McFarland, professors; Clara S. Stoltenberg, associate professor; James Rollin Slonaker, assistant professor; Frank Walter Weymouth, instructor; Karl Ludwig Schaupp, laboratory assistant, and Jean Redman Oliver, Esther Skolfield, John Floyd Pruett and Roscal LeRoy Draper, mechanical assistants, the last two acting for one semester each. Assistant Professor Slonaker was granted sabbatical leave for the second semester.

In the following table of statistics the numbers by which the courses are designated are those used in the Register for 1910-11, to which reference may be made for explanation of the character of the courses:

INSTRUCTOR	COURSE	Unit Hours	Hours per Week		Attendance	
			Lec.	Lab.	1st Sem.	2nd Sem.
Jenkins, Slonaker, Weymouth	1. General Anatomy and Physiology	6	2	5	61	54
Jenkins, Slonaker	2. Physiology of Blood Circulation, Muscle...	3	1	5	28	.....
Jenkins, Weymouth	3. Physiology of Digestion, Respiration, etc.....	3	1	5	.....	26
Stoltenberg	4. Structure of the Nervous System	3	1	5	15	.....
Stoltenberg	4b. Structure of Nervous System (Adv.Course)	2	....	6	2	.....
Stoltenberg	5. Histology of the Nervous System.....	3	1	6	.....	12
Jenkins, Weymouth	6. Physiology of Nervous System and Sense Organs	3	1	5	13	.....
Jenkins	8. Advanced Physiology....	3	1	9	3	3
McFarland	9. Histology	3	1	6	29	22
McFarland	10. Histogenesis	3-5	....	9-15	2	.....
McFarland	13. Special Histology.....	2-3	....	6-9	3	6
Department	14. Journal Club.....	1	1	....	10	12
McFarland	15. Research in Histology..	3-5	....	9-15	1	3
					167	138

Professor McFarland completed a paper upon the Opisthobranch collections of the "Albatross" in the South Pacific, which will appear in the memoirs of the Museum of Comparative Zoology of Harvard University. He continued his work on the Opisthobranch Mollusca of California and Japan during the year. In the summers of 1910 and 1911 he was in charge of the summer session of the Marine Biological Laboratory at Pacific Grove, and during the latter part of the summer of 1911 prepared a report for the United States Bureau of Soils on the kelp resources of the California Coast in the vicinity of Monterey Bay.

Associate Professor Stoltenberg has been engaged on investigations of the nerve tracts in the brain and cord of rodents.

Assistant Professor Slonaker, while absent on leave in the second semester at Clark University, finished two papers, one on the normal activity of the albino rat, from birth to death—its rate of growth and duration of life; the second on the effect of a strictly vegetable diet on the same elements in the life of this rat. The first of these papers is to appear in the January number of the *Journal of Animal Behavior*; the second will appear in the Stanford University Series of publications. The remainder of his time Dr. Slonaker spent in visiting the laboratories of prominent Eastern universities.

Instructor Weymouth has completed his work on the true crabs (*Brachura*) of Monterey Bay, California, and the paper has been published as No. 4 of the Stanford University Series of publications. He has also been engaged in the study of the crabs of the California coast for the State Fish and Game Commission.

Mr. Jean R. Oliver, assistant in histology, completed a paper on the Spermatogenesis of the Fur Seal, *Callorhinus alascanus*.

Research work was also carried on by the following students: Miss L. L. Bland, on the development of the voluntary muscle in *Diemyctylus*; Mr. R. E. Fallas, on regeneration in the larval stages of *Diemyctylus*; Miss A. M. Jenkins, on the terminal sense organs in the skin of *Porichthys*.

OLIVER PEEBLES JENKINS,
Professor of Physiology.

HYGIENE.

The following table gives the statistics of the department for 1910-11:

INSTRUCTOR	COURSE	Hours per Week	Unit Hours	Enrollment	
				1st Sem.	2nd Sem.
Long Maloney Mosher Davis L'Anphere Cleveland	<i>General Education Courses.</i>				
	1. Personal Hygiene Gymnastics	3	1	Men 325 Women 111	258 159
	2. Public Health	3 Gym. 2 lect. 2 lab. 2 lib.	2	17	27
	<i>Department Courses.</i>				
	3. Industrial Hygiene	9 lib. & rec.	3	20	.....
Randall	4. Epidemiology	9 lib. & rec.	3	.....	10
Long Maloney Mosher Davis	5. Physical Training Methods....	3-6 lab.	1-2	Men 8 Women 5	13 13
				486	480

The teaching staff for the year was as follows: Associate Professor William Freeman Snow, Assistant Professors Royce Reed Long and Clelia D. Mosher, Instructor Henry Wilfred Maloney, Acting Instructor W. R. D. Randall, Assistants Edna Grace Davis, Maud L'Anphere and Maude Cleveland, and the following student assistants: J. P. Crawford, C. M. Fulkerson, F. H. Hilton, R. H. Jesson, E. R. Knollin and J. H. Wiggins. Associate Professor Snow continued absent on leave as secretary of the California State Board of Health.

During the year much needed improvements were made in the women's gymnasium, adding new showers, dressing rooms and storage facilities. An appropriation has also been made for an addition to the main building, giving more office space, the construction of which should be completed during the summer. Drinking water has been piped to each gymnasium and sanitary drinking fountains installed. Additional locker and dressing rooms, office room and toilet facilities are greatly needed in Encina Gymnasium. The overcrowding and lack of room hampers our

work, and to effectively teach personal hygiene in an unsanitary environment is a difficult if not impossible task. The building of an addition, such as was proposed by the writer last spring, would relieve the congestion in this building and would give the University a good working equipment for several years to come.

In the future the work that has been carried on by this department will be divided, the technical courses in hygiene will be given by the Department of Medicine, and such general education courses as may be provided in personal and public health and in physical training will be given at the gymnasias.

ROYCE REED LONG,
Assistant Professor of Hygiene and Physical Training.

ZOOLOGY.

The faculty of the department consisted of Charles Henry Gilbert, George Clinton Price and Harold Heath, professors; John Otterbein Snyder, associate professor; Edwin Chapin Starks and Walter Kenrick Fisher, assistant professors, and S. S. Berry, laboratory assistant.

The following courses of instruction were given :

INSTRUCTOR	COURSE	Unit Hours		Attendance	
		Lect.	Lab.	1st Sem.	2nd Sem.
Price, Fisher....	1. Elementary Zoology.....	1	6	54	38
Fisher	2. Elementary Zool. (Spec.) ..	..	6	6	5
Heath	3. Invertebrate Anatomy.....	1	6	6	6
Heath	4. Invertebrate Embryology ..	..	6	.....	5
Heath	5. Invertebrates (Advanced) ..	..	6-9	4	4
Heath	6. Microscopic Anatomy.....	..	6	1	.....
Fisher	7. Invertebrates (Classifica- tion) .....	..	9	2	2
Fisher	8. Invertebrates (Spec. Syst.) .....	..	6-9	1	1
Snyder	9. Vertebrates (Class) .....	..	6	14	22
Snyder	10. Comp. Anat. Vertebrates..	..	9	5	5
Price	11. Vertebrate Embryology....	1	5	5	.....
Starks	12. Ichthyology .....	..	6-9	4	3
Gilbert	13. Ichthyology (Adv.) .....	..	6-15	2	2
Gilbert	14. Journal Club.....	2	.....	7	9
Snyder	15. Vertebrates (Adv.).....	..	.....	2	2
Snyder	16. Comp. Anat. Vert. (Adv.) ..	..	.....	2	1
				115	105

Professor Gilbert continued studies on the life histories of steelhead trout and salmon, especially in relation to economic problems involved. In collaboration with C. V. Burke a report was prepared on the fishes collected by the United States Fisheries steamer Albatross in Bering Sea in 1906. During the summer of 1911 statistical studies were made of the run of sockeye salmon in Puget Sound.

Professor Price was absent on leave during the second semester, spending the time in study in the embryological laboratory of the Harvard Medical School.

Professor Heath continued his work on a monographic report of the Solenogastres of the Western Atlantic Ocean. During the spring and summer of 1911 he was a member of the Branner-Stanford Expedition to Brazil.

Associate Professor Snyder continued investigations of western fresh-water fishes, having in preparation a paper on the Pajaro River basin. During the summer months he began a survey of the basin of the Quaternary Lake Lahontan in Nevada, with the assistance of C. H. Richardson, a student in the department.

Assistant Professor Starks investigated the osteology of various groups of fishes in relation to their lines of descent, and published several papers on this and related topics. During the spring and summer he was a member of the Branner-Stanford Expedition to Brazil, making collections of fishes about Para and Cape St. Roque.

Assistant Professor Fisher began the study of Philippine starfishes, collected by the United States Fisheries steamer "Albatross," 1907-10, and published preliminary papers on new forms in this collection. He published Part I of "Asteroidea of North Pacific and Adjacent Waters," and other papers on starfishes of Hawaii, North Pacific and Caribbean Sea.

Investigations by students in the department were as follows:

C. V. Burke: "A Biological and Taxonomic Study of the Cyclogasteridae."

F. W. Weymouth continued his studies on the systematic relationships of Crustacea from the west coast of the United States and on the life history of the California edible crab.

S. Stillman Berry: "Mollusks of Unity, Maine," "A New Sepiolid from Japan," "A Note on the Genus Lolliguncula," "Preliminary Notices of Some New Pacific Cephalopods."

William F. Thompson: "The early larval stages of a limpet."

C. H. Richardson, Jr.: "Notes on a Little Known Species of Snake, *Chionactis occipitalis*."

William Mann investigated the life history of certain hitherto unknown parasitic protozoa of the white ant; and in collaboration with Professor Starks published a paper on "New and Rare Fishes from Southern California."

Frank K. Pomeroy studied the innervation of the decapod heart.

Miss Grace C. Steinbeck was concerned with the anatomy of certain Alaskan animals of unknown relationships.

CHARLES H. GILBERT,
Professor of Zoology.

ENTOMOLOGY AND BIONOMICS.

The faculty of the department in 1910-11 was composed of Vernon Lyman Kellogg, professor; Mary Isabel McCracken, assistant professor; Rennie Wilbur Doane, assistant professor and curator; Walter Kenrick Fisher, acting instructor in Bionomics; and Assistants W. M. Mann, E. J. Newcomer, J. H. Paine and C. Pemberton, with David Starr Jordan as Lecturer on Bionomics. The number of major students was sixteen, of whom four were graduate students.

Courses given were as follows, with attendance as noted:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
McCracken	1. Elementary Ent.....	3	22	24
McCracken	1a. Morphol. & Physiol. of Insects	3	7	10
McCracken	2. Class. and Devel. of Insects.....	2 or 4	5	2
Doane	3. Econ. Ent. Forest Insects.....	3	7	.....
Doane	3a. Econ. Ent. Orchard and Gar- den	2 or 3	.....	15
Doane	4. Econ. Ent. Coccidae.....	2 or 3	4	7
Kellogg	5. General Ent. and Insect Adap- tation	2	.....	17
Doane	6. Insects and Disease.....	2	8	.....
Kellogg	7. Advanced Work.....	2 or 5	7	8
Jordan and Kellogg	8. Organic Evolution.....	1	.....	94
			60	177

Investigations were carried on during the year by Professor Kellogg on heredity and variations in the silk worm (11th year), and on the parasites of birds and mammals; by Assistant Professor McCracken on the heredity of sporting melanism in silk worms (7th year); and by Assistant Professor Doane on the work of injurious insects in the smelter smoke regions of Shasta and Contra Costa Counties, on injurious insects of Palo Alto, and on the classification of the Tipulidae.

Recent graduates of the department have received appointments as professional entomologists in the United States Bureau of Entomology.

The pressing need of the department is, as stated in the last report, a vivarium or insectary for the better carrying on of certain kinds of work connected with the study of insect biology and economic entomology. Such an insectary has become indispensable for the proper development of the department.

VERNON LYMAN KELLOGG,
Professor of Entomology.

GEOLOGY AND MINING.

The department faculty for the year 1910-11 consisted of Professors J. C. Branner, J. P. Smith, Associate Professor A. F. Rogers, Assistant Professors D. M. Folsom, G. H. Clevenger and L. W. Bahney, Instructors J. R. Pemberton, E. C. Templeton, Acting Instructor A. T. Schwennesen and Assistants G. A. Macready, H. F. Humphrey and H. W. Young.

Instructor J. R. Pemberton resigned at the end of the first semester to accept a position on a Government geological survey in the Argentine Republic, South America, and E. C. Templeton was appointed to fill the vacancy.

The following additions to the equipment of the department were made during the year :

In Mining: Eight models illustrating foreign practice in mining, timbering, etc., were purchased from Richard Braun of Freiberg, Saxony. Models of an oil derrick and of a Harz jig were made by T. N. Turner.

In Geology: One desk and a set of plain pine book shelves were added.

In Metallurgy: The principal items of equipment added are : A bookcase, a Welsbach lamp, a Keller gold balance, a Case gasoline burner, an amalgam press, drawings for lectures, and models of furnaces.

The following gifts should be mentioned: A Case muffle furnace and an oil burner from the Denver Fire Clay Co.; a Braun chipmunk crusher and a gasoline burner with attachments from the Braun-Knecht-Heimann Co.

In Paleontology: A set of fossils was purchased from F. Krantz, Bonn, Germany.

In Mineralogy: A diamond saw, a specific gravity balance, seven mineral cabinets and a hot plate were the principal additions.

During the summer months Dr. Branner, as chief, took a party of eight Stanford naturalists on an expedition to South America to study the geologic and biologic conditions of the northeast coast of Brazil. Through the co-operation of the Brazilian Government and of personal friends much valuable material was collected and brought back to the University. It will be reported upon later.

Professor Smith spent some time collecting fossils in Shasta County, California, and in Oregon.

Professor Clevenger went to Canada to do some practical metallurgical work at the mines of the Nipissing Company at Cobalt, Ontario, Canada.

Professors Folsom and Bahney visited some of the mining districts in Arizona.

Professor Rogers continued his scientific work in the mineralogical laboratories here.

The following table shows the courses given in the department during the year and the attendance of students:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Branner	1. Elementary Geology.....	3	236	.....
Branner	1a. Physiography	1	.....	58
Branner	2. Economic Geology	2	.....	75
Macready, Tem- pleton	3. Topographic Geology	4	.....	27
Macready, Tem- pleton	4. Field Geology	5	.....	25
Rogers, Hum- phrey	5. Mineralogy	3	38	36
Rogers	6. Petrography	2	21	21
Smith	7a. Paleontology	4	5	.....
Smith	7b. Historical Geology	4	.....	27
Smith	8. Paleontologic Research	2-5	10	5
Rogers	9c. Petrology of Igneous Rocks.....	2	.....	5
Rogers	9d. Paragenesis of Minerals.....	2	9	.....
Rogers	9e. Chemical Mineralogy	3	2	3
Smith	Mining 1—Mining Methods.....	3	30	27
Folsom	10. Advanced Paleontology	2	9	12
Folsom, Clev- enger	Mining 2—Ore Dressing	2	.....	41
Folsom	Mining 7—Mine Thesis	4	2	.....
Clevenger, Bahney	Metallurgy 8—General Metallurgy	4	.....	41
Clevenger	Metallurgy 9—Metallurgy of Con- structive Materials	2	64	.....
Clevenger	Metallurgy 10—Metallurgy of Gold and Silver.....	2	22	.....
Clevenger	Metallurgy a—General Metallurgy, Laboratory	2	.....	8
Clevenger	Metallurgy b—Metallurgy of Gold and Silver, Laboratory.....	2	5	3
Clevenger	Metallurgy d—Metallurgical Re- search	2	.....	2
			453	416

J. C. BRANNER,
Professor of Geology.

CIVIL ENGINEERING.

The teaching staff of the department for the year 1910-11 consisted of Professors Charles D. Marx, Charles B. Wing, John C. L. Fish, Instructors John H. Foss and Charles Moser, Assistants M. C. Ayers, C. E. Blee, J. E. Elliott, Herman Endres, N. M. Halcombe, R. L. Hughes, Jr., W. B. McMillan, R. E. Millsap, M. G. Parsons, A. C. Sandstrom, S. B. Shaw, Nelson Taylor, R. L. Vaughn.

During the past year the courses as listed below were given in the department. In addition Dr. Hans Zinsser of the Medical School gave a special elementary course of five lectures on bacteriology to the students in water supply engineering, and Dr. Mitchell of the Chemistry Department delivered, before the same students, a lecture on the interpretation of the chemical analysis of water. The Department of Civil Engineering appreciates the courtesy shown by these colleagues in meeting its special needs and thanks them. In view of the great interest shown in road construction, a special seminary course, for which no credit was given, was arranged for in the second semester of 1910-11.

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Foss and As- sistants	1a. Eng.	1	92	3
Foss and As- sistants	1b. Eng.	1-4	122	103
Fish and As- sistants	4a. C. E.	2-5	47-34	.....
Fish and As- sistants	6a. C. E.	5	.....	27
Fish and As- sistants	6c. C. E.	1-3	.....	11
Fish and As- sistants	6b. C. E.	2	20	.....
Wing and As- sistants	2. Eng.	5	91	.....
Wing and Foss Wing and Moser	8a. C. E.	3	30	2
Wing	8b. C. E.	5	.....	29
Wing	8c. C. E.	2-3	4	8
Wing	9. C. E.	5	34	32
Hoskins	3a. Eng.	3	.....	63
Hoskins	3c. Eng.	3	17	.....
Marx	12. C. E.	5	37	.....
Marx	13. C. E.	5	.....	37
Marx	16. C. E.	2	1	1
Marx	Irrigation	5-10	2	1
Marx	Road Seminary .....	.....	.....	16
			531	333

In the spring of 1911 the Board of Trustees took final action on the recommendation made some years ago in the matter of changing the present location of the power-house. As soon as the new power-house is completed the old power-house will be equipped as an instructional laboratory on the mechanics of materials, and a small hydraulic laboratory will be built. Sufficient funds for the first equipment of both of these laboratories have been set aside by the Board of Trustees. The department gratefully acknowledges this action taken, and knows that it would have been done some years ago had not the disaster of 1906 made serious inroads upon the finances of the University.

CHAS. D. MARX,
Professor of Civil Engineering.

MECHANICAL ENGINEERING.

The teaching force in the department for the year 1909-10 was as follows: William Frederick Durand, Professor of Mechanical Engineering; Guido Hugo Marx, Professor of Machine Design; William Rankine Eckart, Associate Professor of Experimental Engineering; Everett Parker Lesley, Assistant Professor of Mechanical Engineering and Superintendent of Shops; Lawrence Edminster Cutter, Instructor in Drawing; Charles Norman Cross, Instructor in Experimental Engineering; Frank Oakes Ellenwood, Instructor in Experimental Engineering; Edward John Stanley, Instructor in Woodworking and Pattern Making; James Bennett Liggett, Instructor in Foundry; Theron James Palmateer, Instructor in Machine Shop; Robert Henry Harcourt, Instructor in Forge Shop.

During the first semester 1,111 student credit hours of instruction were given by 11 instructors, or an average of 100 per instructor. The similar figures for the second semester are a total of 1,375 student credit hours, or an average per instructor of 125.

Report of the President

61

The classes taught and number of students in attendance are shown by the following tabular presentation :

INSTRUCTOR	COURSE	KIND OF WORK	Hours Credit	Attendance	
				1st Sem.	2nd Sem.
Harcourt	1a, 1b	Lect. and Shop..	1-3	63	50
Liggett	3a, 3b	Lect. and Shop..	1-3	33	45
Stanley	5, 6a, 6b.....	Lect. and Shop..	1-3	70	73
Palmateer	7a, 7b, 8.....	Lect. and Shop..	1-3	30	50
Lesley	9.....	Lecture	1	.....	3
Cutter	11. El. Mach. Drawing..	Drawing	2 or 3	67	45
Marx, G. H.....	13a. El. Mach. Design...	Lecture	3	.....	42
Marx, G. H.....	13b. El. Mach. Design...	Drawing	2	.....	42
Marx, G. H.....	14. Machine Design.....	Lect. and Draw..	4	6	6
Marx, G. H.....	15. Machine Design.....	Lect. and Draw..	5	5	.....
Marx & Cutter	16. Adv. Machine De- sign	Lect. and Draw..	3	8	6
Eckart	21. Calibration and use of engineering ap- paratus	Lect. and Lab....	3	.....	27
	22. Testing of Engines and boilers	Lect. and Lab....	3	22	.....
	23. Testing of Pumping Machinery, Power Plant Auxiliaries, etc.	Lect. and Lab....	3	.....	9
	24. Abridged Course in Experimental En- gineering	Lect. and Lab....	3	.....	33
	25. Advanced Course in Experimental Eng.	Laboratory	1-5	.....	3
	31. Heat Engines.....	Lect. and Office Work	3	67	.....
	33. Heat Engines.....	Lect. and Office Work	3	.....	30
	34. Thermodynamics ...	Lecture	1	.....	6
	35. Power Plants.....	Lecture	2	24	.....
	36. Pumping Machinery	Lecture	2	.....	33
Durand	37. Seminary	Lecture	1	5	15
				400	518

The general development of the work in the various branches of the Department of Mechanical Engineering has followed along lines similar to those discussed in previous reports, and further progress has been made in developing and co-ordinating the various lines of work in the department.

The general policy of adding some valuable definite item of equipment in the shops and laboratories has been followed by the purchase of a new saw table for the pattern shop.

The general needs of the department include further additions to the teaching force to cover important lines of work and further large additions to the equipment in the shops and laboratories in order to render such instruction most effective.

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

ELECTRICAL ENGINEERING.

The personnel of the department during the year was made up as follows: Harris Joseph Ryan, professor; Samuel Barclay Charters, Jr., and William Arthur Hillebrand, assistant professors; Eugene Garrison McCann, assistant.

The lecture, laboratory and class instruction, and the corresponding number of students in attendance are given in the accompanying table:

INSTRUCTOR	COURSE	Lectures	Class	Design	Lab.	Attendance	
						1st Sem.	2nd Sem.
Ryan, Charters, Hillebrand	A	1	---	---	---	25	20
Charters, Mc- Cann, Hille- brand	1.	3	---	---	1	48	---
Hillebrand	2a.	1	---	---	---	19	---
		---	4	---	---	---	18
Charters, Mc- Cann, Hille- brand	2b.	---	---	---	4	---	18
Ryan	3a1.	4	---	---	---	15	---
		2	---	---	---	---	15
Charters	3a2.	2	---	---	---	---	30
Charters	3a3.	2	---	---	---	---	26
Charters, Hille- brand	3b1.	---	---	---	4	15	---
Hillebrand	3b2.	---	3	---	---	15	---
Ryan	3c1.	---	---	4	---	---	9
Charters	3c2.	---	---	4	---	---	6
Hillebrand	3c3.	---	---	4	---	---	1
Charters	10.	---	---	---	1	---	1
						137	144

The most important feature of progress in the department during the year was made through the new one-hour "survey" course required of all students during the first five semesters after regular entrance. The object

sought in this course is to acquaint the new student with the nature of electrical industries and the sort of human character, ability and training demanded for success therein. This is accomplished both by the things the student is told and the things he is made to do and to think about. Messrs. Charters and Hillebrand have covered this undertaking in their paper before the Society for Promotion of Engineering Education, referred to below.

In other respects the progress of the department has been normal along the lines presented in previous reports.

Gifts were made to the University for the department as follows:

Exhibit case containing carbon products of the National Carbon Co., Cleveland, Ohio.

Part of the disconnecter switch showing effects due to corona when used on the 100,000 volt transmission of the Central Colorado Power Co., Mr. E. L. West, general manager.

During the year the series of high-voltage investigations undertaken to determine the underlying causes of the dielectric failure of the atmosphere about a high-voltage transmission line and of the insulating oil used in the corresponding transformers was brought to a close. A complete report of this work was made in a paper by Mr. Ryan, presented and discussed at the January, 1911, meeting of the American Institute of Electrical Engineers in New York City, and published in the January and May, 1911, Proceedings of the A. I. E. E., Vol. XXX, pp. 1 and 964.

The laboratory high-voltage studies that resulted in the development of the electrostatically operated cathode ray power diagram indicator were presented in a paper by Mr. Ryan that was read and discussed at the Pacific Coast convention of the A. I. E. E., held in Los Angeles, April 27th. A paper by Messrs. Charters and Hillebrand on "An Engineering Course for Underclassmen" was read by Mr. Charters at the Pittsburgh meeting of the Society for the Promotion of Engineering Education. At the October, 1911, meeting of the San Francisco Section of the A. I. E. E. a paper by Messrs. Charters and Hillebrand on the problem of technical education with special reference to conditions on the Pacific Coast was read and discussed. The publication of these papers is noted elsewhere in the President's report.

The following lectures were given by visiting electrical engineers, to whom the department gratefully acknowledges its indebtedness for their helpful interest in its work and duties:

"The Engineer as a Student," by Mr. C. O. Mailloux, consulting engineer, New York City.

"Voltage Regulators for Transmitting Circuits," by Mr. A. S. Heyward, electrical engineer, General Electric Co., San Francisco.

"The Present-Day Aspect of the Factories of the Westinghouse Electric and Manufacturing Co. at Pittsburgh, Pa.," by Mr. Waldo C. Cole, electrical engineer, Westinghouse Electric and Manufacturing Co., San Francisco.

"The Opportunities of the Electrical Engineer Graduate," by Mr. A. L. Alvord, electrical engineer, General Electric Co., San Francisco.

HARRIS JOSEPH RYAN,
Professor of Electrical Engineering.

MEDICINE.

The personnel of the department faculty for the year has been as follows: Professors Adolph Barkan, Henry Gibbons, Joseph Oakland Hirschfelder, Stanley Stillman, Emmet Rixford, William Ophüls, Oliver Peebles Jenkins, John Maxson Stillman, Arthur William Meyer, Frank Mace McFarland, George Clinton Price, Albert Cornelius Crawford, Hans Zinsser, Clinical Professor William Fitch Cheney, Associate Professors William Freeman Snow and Robert Eckles Swain, Assistant Professors James Rollin Slonaker, Clara S. Stoltenberg, Frank Ellsworth Blaisdel, and Ernest Charles Dickson, Instructor Ruskin M. Lhamon and Assistant Georgina Spooner.

Instruction in medicine was given to two classes, and January, 1911, the second year students began work in San Francisco in the buildings formerly the property of Cooper Medical College. That institution had only third and fourth year students and graduated its next to last class in May. Next year (1911-12) Stanford will have three classes and Cooper Medical College one, made up only of senior students, and July 1, 1912, Stanford will come into complete control of the Cooper Medical School buildings and Lane Hospital, beginning in September of that year the instruction of a full quota of classes.

During the past year sixteen students were registered in medicine, with six in the second year class, a number of the first class having gone to eastern institutions, where their Stanford work was given full recognition. Five of the first year class are already holders of A. B. degrees. Besides the regular students in medicine a number of others have taken work in the divisions of bacteriology and anatomy. Numerous applications for admission to the Medical Department are constantly being made, but because of the advanced standards set it will take some time for prospective students to properly prepare themselves. Fortunately, Stanford has, since its beginning, prepared students thoroughly for medical work, so that we have a certain number of these from which to draw. The number of medical students has decreased at most of the medical schools of the United

States because of the rather general elevation of admission standards and the previous overcrowding of the profession with the graduates of low standard schools. With its present laboratory equipment, Stanford can handle classes of twenty-five to thirty readily and there is a good prospect that that number can be expected as soon as time has elapsed for individuals to properly prepare themselves for admission.

The principal faculty changes have been the resignation, January 1, 1911, of Professor J. M. Stillman as acting executive and the return from leave of absence of Dr. R. L. Wilbur, executive head, to take his place, the placing on the emeritus roll of Professors Adolph Barkan and Henry Gibbons, Jr., the elevation of Dr. Hans Zinsser to the professorship of bacteriology, the change in title of Dr. William Fitch Cheney to that of clinical professor of medicine, the transfer of Dr. William F. Snow from associate professor to clinical professor of hygiene and public health. Assistant Professor Clara Stoltenberg has been made associate professor of physiology. Professors Barkan and Gibbons, while being placed on the emeritus list, are retained by special assignment as active members of the faculty organization, and by courtesy members of the University Council. Professors Stanley Stillman, Rixford and Hirschfelder have also been made members of the University Council.

The first class in medicine in San Francisco was instructed in surgery by Drs. Stillman and Rixford, in medicine and therapeutics by Dr. Wilbur, in applied anatomy by Dr. Blaisdell, in pathology by Drs. Ophüls and Dickson, and in pharmacology and prescription writing by Dr. Crawford.

The laboratories for the work in anatomy, pharmacology and bacteriology at Stanford have been completed and their equipment is already adequate for excellent work. The pathological work in San Francisco is being carried on with the apparatus and laboratory formerly used by Cooper Medical College for that purpose. The physiology laboratory in the college building has been arranged to serve as a laboratory for medical research. The clinical material of the dispensary has been used by the University in the teaching of past year by the courtesy of the Cooper faculty. With an increasing number of classes, more and more of the various clinics will come under the control of the University. When the new Lane Library is built the space now occupied by it in the college building will make room for the much needed extension of the clinics.

The Lane Medical Library is an excellent one and has been and will be of inestimable value to Stanford. The binding and cataloguing of the books has gone rapidly forward and another year will see the sets of principal journals bound and easy of access.

The divisions of the Medical Department have been rearranged and are now as follows: Anatomy, bacteriology, chemistry, hygiene and pub-

lic health, medicine and subdivisions, obstetrics and gynecology, pathology, pharmacology, physiology, and surgery and subdivisions. The Department of Hygiene, except for certain executive functions, has been transferred to the Medical Department in San Francisco.

A good foundation for sound medical instruction upon a true University basis has been laid. The aim of the future should be to create conditions for the clinical years similar to those now prevailing for the first two years of the medical course. This will mean additional expense for laboratories and professorships. As soon as possible after the Lane Hospital comes under the control of Stanford it should be converted into a University hospital. The proposed construction of the new Lane Library building upon the lot across the street from the Medical building in San Francisco, assured by an additional gift of \$20,000 from the directors of Cooper Medical College, will add greatly to the efficiency of the institution. With the hospital, library, laboratories, clinics and lecture rooms all so well concentrated and arranged the appropriation of an adequate amount for salaries and running expenses will permit of the best grade of medical work for the moderately sized classes that are to be expected for some years.

RAY LYMAN WILBUR,
Professor of Medicine.

THE SEASIDE LABORATORY.

The twentieth session of the Marine Biological Laboratory at Pacific Grove began on Wednesday, May 31st, and continued for six weeks, closing on July 11th.

The laboratory was in charge of Professor F. M. McFarland, assisted by Mr. Karl L. Schaupp, as teaching assistant, and by Mr. J. R. Oliver, as laboratory attendant.

Twenty-four students were in attendance, distributed as follows:

1. General Marine Zoology, 13 students.
2. Advanced Marine Zoology, 4 students.
3. General Embryology, 7 students.
4. Research in Cytology, 1 student.

Mr. J. R. Oliver, in addition to his duties as attendant, completed a paper on the "Spermatogenesis of the Fur Seal."

The following investigators were in attendance at various times during the past year, the most of them during the summer months:

Mr. W. S. Allen, graduate student in the University of Illinois, whose work was on the phenomena of regeneration in certain marine Annelids.

Mr. R. J. Beck, assistant in ornithology in the Alexander Museum of Vertebrate Zoology at the University of California, in the making of collections of birds for the museum.

Professor Charles H. Gilbert, Leland Stanford Junior University, studying the life history of the salmon.

Professor Charles W. Greene, University of Missouri, studying the physiology of the salmon.

Dr. Nettie M. Stevens, associate in biology, Bryn Mawr College, engaged in cytological studies upon various invertebrates.

Mr. George T. Kline, biological artist and technician, University of Missouri, assisting Professor Greene.

Mr. H. B. Judy, artist of the Brooklyn Institute Museum, engaged in making studies of marine life to be used in mural paintings for the Hall of Invertebrates in the Brooklyn Museum.

In the early part of the summer the Monterey Light and Power Company rewound the motor of the laboratory pumping plant, free of charge, thus adapting it to the form of electric current now furnished to the laboratory.

FRANK MACE MCFARLAND,
Instructor in Charge.

APPENDIX I

REPORTS OF COMMITTEES

STUDENT AFFAIRS.

The Committee on Student Affairs deals in general with the unpleasant side of University life. However excellent, devoted, loyal and moral the great body of the students may be, there are always some who fail to be true to themselves. With these the committee is called upon to deal. During the year there have been fourteen cases requiring special discipline, these ranging from thoughtless inadvertence to the verge of criminality. Without any properly authorized officers, and with no means of securing evidence, the work of the committee in dealing with offenders is often disheartening. It is hoped that in time the student body may be prepared to deal with the few among their number who indulge in irregular or immoral practices. There is nothing of greater value to the individual student than to be surrounded by a clean-minded body of associates.

The Committee on Student Affairs permits the holding of social and dramatic events on Friday and Saturday evenings, and evenings just preceding holidays. It is insisted that all entertainments close at midnight and be properly chaperoned. Relative simplicity in decoration and economy of expenditure generally, in connection with such entertainments, is encouraged.

There is a suggestion towards using Friday evenings for the meetings of academic and departmental organizations, leaving only Saturday evening free for dances and purely social affairs. The committee is now awaiting instructions from the Academic Council in this matter.

The rule limiting individuals to participation in but one dramatic performance each semester works well. It distributes both the burdens and the benefits of dramatic activity among a greater number of students. It has in no way lowered dramatic standards. Only by the utmost firmness, however, is this rule maintained, as constant petition is made for its suspension in favor of this or that dramatic enterprise.

The committee has had various conferences with the editors of the college papers and with the correspondents of city journals with a view to securing accuracy in their reports of University affairs. The results have been in general encouraging, though slips frequently occur even with men of the best intentions.

The form of hazing called "tubbing" has been virtually brought to an end, with the co-operation of the Encina House Committee, which repre-

sents the responsible government of the hall. Conferences have been held with each fraternity president, and it seems probable that this objectionable custom will be entirely abolished. All forms of hazing are forbidden.

On the whole, the penalties meted out by the committee this year have been fewer and less severe than on most previous years. The question of what to do with the delinquent student is always a difficult one, and there is no possible rule which can cover the great variety of such cases.

ARTHUR BRIDGMAN CLARK,
Chairman.

COMMITTEE ON DELINQUENT SCHOLARSHIP.

The records of the committee for the year 1910-11 indicate that 116 students were judged to have incurred a "first failure," not having completed satisfactorily two-thirds of the work for which they were registered. Of these, 81, or approximately 70 per cent, availed themselves of the privilege of continuing their work without interruption the semester succeeding that in which the failure was incurred. In addition to the above, 59 students were requested to withdraw from the University because of failure in their studies, 21 of these being then on probation from the previous semester, 25 having incurred and 13 being denied a second trial because of failure in practically all the courses for which they were registered.

Of the total of 175 failures for the year, 157 were men and 18 women, or, stated in percentage of the number of each group registered in the University, 13 per cent of the men failed and 3 per cent of the women.

In the following table, men and women are grouped separately by residence, the percentage of failures being given separately for each group:

<i>Residence—</i>	MEN.	Total Number	Per Cent of Failures
Palo Alto and Mayfield.....		331	10
Encina Hall		280	8.5
Private residence on Campus.....		110	17
"Commuters" (from San Jose, etc.).....		110	10.7
Fraternities		361	18.7
	WOMEN.		
Palo Alto and Mayfield.....		124	4.7
Roble Hall.....		105	2
Madrono Hall and private residence on campus.....		140	4
"Commuters" (from San Jose, etc.).....		34	0
Sororities		163	2.4

Comparing this table with the similar one published in the President's report for 1909, an interesting correspondence is observed. In both years the most favorable residence for men, so far as their scholarship is concerned, is Encina Hall, and by far the least favorable is in the fraternities and in private residences on the campus. Among the women no failures are recorded among those who live away from the University and pass back and forth daily on the trains. Roble Hall and the sororities seem about equal in their reaction on scholarship, and the least favorable conditions would seem to be found in private residences on the campus in the neighboring towns of Palo Alto and Mayfield.

CHARLES HENRY GILBERT,
Chairman.

APPENDIX III

REPORT OF THE REGISTRAR

The number of students in attendance in 1910-11 was 1,758. Of these, 1,117 had previously been in attendance, 581 were new students. As compared with 1909-10, there was an increase in old students of 42 and a decrease in new students of 28, making a total increase of 14.

STATISTICS OF REGISTRATION, 1906-1911.

	1906-07	1907-08	1908-09	1909-10	1910-11
Old students	1155	1164	1133	1135	1177
New students.....	513	574	534	609	581
	1668	1738	1667	1744	1758
Percentage of old students returning	64.6	69.7	65.1	68.0	67.0
From California.....	1329	1438	1319	1364	1371
From other States.....	339	300	348	380	387
Percentage outside California.....	20.2	17.2	20.8	21.8	22.0

AVERAGE AGE AT MATRICULATION.

Graduates*	29.7	28.7	28.3	28.2	29.7
Advanced standing	21.5	22.8	22.3	22.5	21.6
Freshmen	19.9	20.4	19.9	20.2	21.5
Specials	25.0	25.1	24.0	23.7	26.5

*From other colleges.

AGE OF FRESHMEN AT MATRICULATION.

Under 17	5	4	4	5	4
17-18	34	41	33	29	35
18-19	89	104	89	104	108
19-20	118	123	111	117	122
Over 20	161	135	143	145	123
	407	407	380	400	392

STATISTICS OF ENTERING CLASS, 1910-11.

	Number Entering	Number Returning 1910-11	Failed in Scholarship
From Colleges—			
Graduates	48	12 (25%)	0 (0%)
With advanced standing	101	63 (62%)	6 (6%)
Without advanced standing	18	10 (55.5%)	4 (2%)
	167	85 (51%)	10 (6%)
From Normal Schools.....	19	12 (63%)	1 (5%)
From Preparatory Schools—			
On recommendation (wholly or mainly) :			
In full undergraduate stand- ing	349	293 (84%)	27 (7.7%)
In partial standing	5	1 (20%)	2 (40%)
Wholly on examination :			
In full standing	2	1 (50%)	.....
In partial standing	0	0	.....
	356	.....	.....
As special students.....	39	18 (46%)	11 (28%)
	581	410 (70.5%)	52 (9%)

COMPARATIVE NUMBERS AT MATRICULATION.

	1909-10	1910-11
From Colleges—		
Graduates	40	48
With advanced standing	120	101
Without advanced standing	15	18
	175	167
From Normal Schools.....	15	19
From Preparatory Schools—		
On recommendation (wholly or mainly) :		
In full undergraduate standing	350	349
In partial standing	13	5
Wholly on examination :		
In full standing	5	2
In partial standing	1	0
	384	356
As special students	50	39
Total	609	581

CLASSIFICATION BY MAJOR SUBJECTS.

	1907-08	1908-09	1909-10	1910-11
Greek	19	15	11	4
Latin	54	45	40	42
Germanic Languages	92	81	94	77
Romanic Languages.....	20	36	40	35
English	177	165	149	153
Philosophy	2	6	5	5
Psychology	4	3	3	6
Education	26	37	39	57
History	143	139	152	185
Economics	131	144	157	149
Law	295	37	86	124
Pre-Legal .....	....	211	189	188
Graphic Art	31	33	47	51
Mathematics	34	28	22	22
Applied Mathematics .....	....	....	....	1
Physics	13	11	13	13
Chemistry	83	79	79	66
Botany	31	31	29	25
Physiology	53	55	70	61
Anatomy .....	....	....	....	2
Bacteriology .....	....	....	....	2
Zoology	28	30	24	19
Entomology	11	9	13	16
Geology and Mining.....	123	127	100	102
Civil Engineering	185	169	196	182
Mechanical Engineering	66	63	69	51
Electrical Engineering.....	117	113	108	109
Medicine .....	....	....	15*	17†
	1738	1667	1744	1758

*Including 6 also counted under Physiology.

†Including 6 also counted under Physiology.

DISTRIBUTION OF ENTERING CLASS, 1910-11

FROM COLLEGES, ETC.

Amherst College	1	Smith College	2
Antioch College	1	Southwestern University	1
Berea (Ky.) College	1	Tabor College	1
Beloit College	2	Toyokukai College	1
Christian Union College	1	University of Arizona	1
Columbia University	3	California	15
Cornell University	1	Chattanooga	1
DePauw University	1	Chicago	6
Franklin College	1	Cincinnati	1
Gustavus Adolphus	1	Colorado	3
Harvard University	2	Denver	1
Holy Cross College	1	Idaho	3
Iowa State College	4	Illinois	1
Kansas University	3	Indiana	1
Kentucky University	1	Minnesota	7
Kingfisher College	1	Missouri	1
Knox College	1	Nashville	2
Lake Forest College	1	Nebraska	1
Lombard College	1	Nevada	1
McPherson College (Kansas)	1	New Mexico	1
Mills College	1	Oklahoma	1
Mississippi Industrial Inst.	1	Oregon	2
Monmouth College	1	Pacific	5
Montana School of Mines	1	Rochester	1
New York University	1	South Dakota	1
Northwestern University	1	So. California	21
Oahu College	1	Texas	3
Oberlin College	2	Utah	4
Occidental College	13	Virginia	1
Ohio Wesleyan University	1	Washington	3
Oregon Agricultural College	4	Wisconsin	3
Pomona College	9	Valparaiso University	1
Princeton University	1	Vassar College	1
Rush Medical College	1	Wabash College	1
St. Ignatius College	1	Washington and Lee University ..	1
St. Mary's College	1	Wellesley College	1
Santa Clara College	5		

FROM NORMAL SCHOOLS.

Alva (Okla.) State Normal.....	3	Lewiston (Idaho) State Normal.....	1
Arizona State Normal.....	1	San Diego State Normal.....	2
Chico State Normal.....	1	San Francisco State Normal.....	1
Kentucky State Normal.....	1	San Jose State Normal.....	6

FROM PREPARATORY SCHOOLS.

Alameda H. S.....	5	Hamlin School	1
Armour Academy	1	Hanford H. S.....	3
Arroyo Grande H. S. 1.....	1	Harker School	1
Ashland (Ore.) H. S.....	1	Harvard School	5
Ashville School.....	1	Hill Military Academy.....	1
Auburn, H. S.....	1	Hilo (H. T.) H. S.....	1
Azusa H. S.....	1	Hitchcock Military Academy.....	4
Bakersfield H. S.....	2	Hoitt's School	4
Belmont School	2	Hollywood H. S.....	3
Benicia H. S.....	1	Hoquiam (Wash.) H. S.....	1
Berkeley Preparatory.....	1	Huntington Hall	1
Blees Military Academy.....	1	Huron (S. D.) H. S.....	2
Boise (Idaho) H. S.....	2	Kern Co. H. S.....	2
Boone's University School.....	1	La Junta H. S.....	1
Branham and Hughes School.....	1	Lassen County H. S.....	1
Butte (Mont.) H. S.....	1	Long Beach H. S.....	4
California School Mech. Arts.....	4	Los Angeles H. S.....	20
Campbell H. S.....	1	Los Gatos H. S.....	2
Carthage (Mo.) H. S.....	2	Lowell H. S. (S. F.).....	5
Castilleja School	3	McKinley H. S.....	1
Centerville H. S.....	1	Madera Union H. S.....	1
Charleston (Mo.) H. S.....	1	Manzanita Hall	4
Chico H. S.....	3	Marshall (Ia.) H. S.....	1
Cogswell Polytechnic	1	Mercersburg Academy	1
Colton H. S.....	3	Millersburg Military Academy..	1
Columbia College Prep.....	1	Mission H. S. (S. F.).....	1
Concord H. S.....	1	Modesto H. S.....	1
Covina H. S.....	2	Monrovia H. S.....	3
Cumnock School of Oratory.....	1	Monterey H. S.....	1
Curtis H. S. (Chicago).....	1	Mt. Tamalpais Mil. Acad.....	1
Denver East Side H. S.....	1	Mountain View H. S.....	4
Dominican College.....	1	Muskegon (Mich.) H. S.....	1
El Paso H. S.....	1	Nampa (Idaho) H. S.....	1
Ellensburg H. S.....	2	National Prep. School (San Sal-	
Escondido H. S.....	1	vador)	1
Eureka H. S.....	4	Oahu College Prep.....	4
Ferndale H. S.....	1	Oakland H. S.....	2
Fresno H. S.....	1	Oakdale H. S.....	3
Galena (Kans.) H. S.....	1	Orange H. S.....	2
Gilroy H. S.....	2	Osage (Ia.) H. S.....	1
Girls' Collegiate School.....	1	Pacific Grove H. S.....	3
Girls' High School (S. F.).....	1	Palo Alto H. S.....	28
Glendale H. S.....	1	Pasadena H. S.....	7
Grand Junction (Colo.) H. S.....	1	Phillips Exeter Academy.....	1
Gridley H. S.....	1	Phoenix (Ariz.) H. S.....	1

Pillsbury Academy	2	Santa Clara H. S.	2
Polytechnic H. S. (Los. A.).....	16	Santa Cruz H. S.	1
Polytechnic H. S. (S. F.).....	1	Santa Maria H. S.	3
Pomona H. S.	3	Santa Monica H. S.	1
Porterville H. S.	1	Santa Paula H. S.	3
Portland Academy.....	1	Santa Rosa H. S.	3
Portland H. S.	4	Saybrook H. S.	1
Prescott H. S.	1	Seattle H. S.	3
Raton (N. M.) H. S.	1	Selma H. S.	2
Redding H. S.	3	Sierra School	1
Redlands H. S.	6	Spokane H. S. (Wash.).....	5
Redwood H. S.	1	Stockton H. S.	1
Riverside H. S.	5	Tacoma (Wash.) H. S.	1
Rock Island (Ill.) H. S.	1	Throop Polytechnic Inst.....	3
Roswell (N. M.) H. S.	2	Trinity School (S. F.).....	1
Royalton (Mont.) H. S.	1	Ukiah H. S.	1
St. Luke's School	1	University of Arizona Prep.....	1
St. Matthew's School.....	3	Univ. of the Pacific Acad.....	1
St. Paul Mech. Art School.....	1	Vacaville H. S.	1
Salinas H. S.	1	Ventura H. S.	5
Salt Lake H. S.	6	Waitsburg H. S.	1
San Antonio H. S. (Tex.).....	1	Washburn School.....	4
San Bernardino H. S.	6	Wash. (D. C.) Central H. S.	1
San Diego H. S.	7	Watsonville H. S.	1
San Jose H. S.	34	Westtown Boarding School.....	1
San Mateo H. S.	3	Whittier H. S.	1
San Rafael H. S.	2	Winterset (Ia.) H. S.	2
Santa Ana H. S.	1	Woodland H. S.	2
Santa Barbara H. S.	5		

REGISTRATION OF STUDIES.

Fifteen units constitute a normal semester's work. The following was the actual registration during 1910-11:

	Number of Students	
	First Semester	Second Semester
For 1 unit	0	0
2	0	0
3	0	1
4	0	1
5	0	0
6	0	1
7	1	0
8	3	1
9	1	7
10	10	14
11	28	14
12	26	44
13	168	153
14	249	214
15	463	436
16	274	216
17	139	167
18	106	104
19	2	5

PETITIONS BEFORE COMMITTEE ON REGISTRATION, 1910-11.

	First Semester	Second Semester
Total number of petitions acted upon.....	786	577
To change registration by dropping subjects, or taking up new subjects, or both.....	585	315
To change major subject.....	37	27
To register for fewer than thirteen units.....	*78	†93
To register for more than eighteen units.....	8	11
For leave of absence.....	65	66
Miscellaneous	54	91

*Of these 78 petitioning for fewer than thirteen units, 41 are included in change of registration.

†Of these 93 petitioning for fewer than thirteen units, 26 are included in change of registration.

STATISTICS OF GRADUATION.

The total number of degrees conferred in 1910-11 was 338, distributed as follows:

	Ph. D.	J. D.	A. M.	Engr.	LL. B.	A. B.
Greek	---	---	1	---	---	2
Latin	---	---	8	---	---	8
Germanic Languages	---	---	3	---	---	15
Romanic Languages	---	---	1	---	---	8
English	---	---	5	---	---	38
Philosophy	---	---	---	---	---	3
Psychology	---	---	---	---	---	1
Education	---	---	6	---	---	10
History	---	---	4	---	---	23
Economics	---	---	2	---	---	16
Law	---	14	---	---	---	29
Graphic Art	---	---	---	---	---	7
Mathematics	---	---	---	---	---	4
Physics	3	---	1	---	---	2
Chemistry	1	---	3	1	---	13
Botany	---	---	1	---	---	3
Physiology	---	---	1	---	---	10
Zoology	---	---	1	---	---	4
Entomology	---	---	2	---	---	4
Geology and Mining	---	---	---	3	---	16
Civil Engineering	---	---	---	1	---	39
Mechanical Engineering	---	---	---	1	---	8
Electrical Engineering	---	---	---	---	---	12
	4	14	39	6	---	275

In the case of the 275 students who received the degree of Bachelor of Arts the period of residence was as follows:

2 semesters	15
3 semesters	7
4 semesters	18
5 semesters	7
6 semesters	19
7 semesters	26
8 semesters	125
9 semesters	33
10 semesters	19
11 semesters	5
12 semesters	1
	<u>275</u>

The 92 students who took their A. B. in less than four years were enabled to do this as follows ("extra courses" meaning courses in excess of the normal 15 units per semester) :

Through advanced credit from other institutions	56
Through advanced credit supplemented by extra courses.....	9
Through advanced credit supplemented by summer work.....	7
Through advanced credit supplemented by extra entrance.....	2
Through summer work and extra courses	9
Through credit for extra entrance units	2
Through credit for extra entrance units and extra courses.....	7
	<hr/> 92

FACULTY ACTION.

At the request of the Board of Trustees the question of changing the date of beginning the University year to correspond more closely to that of the University of California was brought to the attention of the Executive Committee. After lengthy discussion it was felt that, except for the greater convenience in the case of women failing to secure admission to the University, there were no reasons for preferring an earlier date to the calendar already in force. In view of the assurances of the Committee on Admission that the embarrassing circumstances of 1910 were not likely to be repeated, it was decided to recommend no change in the calendar in this respect.

January 4, 1911, President Jordan addressed the chairman of the Committee on Athletics as follows :

January 4, 1911.

Dr. Frank Angell,
Chairman Committee on Athletics,
Stanford University, Cal.

DEAR SIR :

With a view to carrying out certain reforms in athletics, on the desirability of which your committee and I are agreed, permit me to suggest that your committee, which is an administrative one, as soon as may be should make the following adjustments :

1. To provide that no student shall take part in intercollegiate games in his first year in the University. I recommend that this arrangement be perfected just as soon as our arrangements with the University of California will permit, and in any event not later than July 1, 1912.

2. To provide that no paid coaches be employed by the student body after the expiration of the terms of those now so employed, and in any event none later than January 1, 1912.

3. To provide for such modification as may be desirable as to the rules concerning the period of eligibility to participate in intercollegiate games.

4. To be prepared at the next meeting of the Academic Council to discuss the plans and purposes of the Athletic Committee, especially in regard to the matters above named.

Very truly yours,

(Signed) DAVID STARR JORDAN.

At the meeting of the Academic Council, held January 13, the following resolution was adopted:

Resolved:

That the Academic Council approves and adopts the instructions of the President to the Chairman of the Athletic Committee as the fixed policy of the University;

That, if possible, with due courtesy to the University of California, and in view of commitments already made, participation of first year students in intercollegiate athletics cease at the end of the present academic year;

That the Chairman of the Committee on Athletics be requested to report to the Academic Council at its regular May meeting the results of his efforts in carrying out this policy.

In 1891, at the opening of the University, four grade marks were authorized—namely, excellent, passed, conditioned, failed. After the first semester, the grade excellent was abolished. Provision was made, however, that on the regular semester reports general terms such as good, fair, excellent, poor, etc., might be used by way of comment on the passing mark, but that these should not be made a part of the student's office record. In 1904 it was provided that the letters A, B, C and D, A being the highest and D the lowest passing mark, might be used and entered on the large record card, all passing grades still being reported to the student simply as passed. At the meeting of the Academic Council, held January 13, 1911, the following recommendation, already approved by the Executive Committee, was adopted:

"That the provisions that no higher mark than passed be reported to any student and that the grades A, B, C and D be entered on the student's report card as plus, be stricken out and that the Registrar be authorized to enter grade marks on the student study cards."

By resolution of the Academic Council, adopted May 20th, a special committee was provided to which was referred the entire matter of University policy with instructions to formulate and to submit to the Academic Council recommendations for positive University action looking toward the development of graduate and professional work. This committee was composed of the President and ten members of the Academic Council elected by ballot at the meeting held September 9, 1910, namely, Professors Adams, Alden, Flügel, Franklin, Hoskins, Kellogg, G. H. Marx, Matzke, Peirce and Woodward, Professor Meyer being afterward elected to the vacancy caused by the death of Professor Matzke. This committee submitted a report to the Council under date of April 11th, its principal recommendations being as follows:

(1) That a graduate school be organized to include and foster the work leading to the degrees of Master of Arts and Doctor of Philosophy and such work in the professional departments as is of corresponding character.

(2) That the Board of Trustees be requested, pursuant to their resolution of May 27, 1910, to establish ten graduate fellowships to be known as the University Fellowships.

(3) That the Board of Trustees be requested to sanction the establishment of a graduate summer school.

(4) That membership in the University after the first two undergraduate years be limited to those students who have evinced seriousness of purpose and fitness for scholarly or professional work.

(5) That the Executive Committee be directed to formulate and report plans for the giving of a junior certificate to students who shall have completed two years' work in the University.

(6) That the feasibility of conferring a degree upon students who have successfully completed two years of University work be considered, if possible, by a committee representing the University of California and Stanford University.

The first part of this report, recommending the organization of a graduate school, was discussed in the Academic Council April 11 and April 14, 1911. In the end the plan was rejected and a substitute proposition enlarging the membership of the Committee on Graduate Study to eleven, elections to be by the Academic Council without nomination and by sealed ballot, was adopted. The remainder of the report was laid on the table.

On recommendation of the Committee on Public Health the regulations governing vaccination were revised as follows:

(1) Each student will be required to present, for purposes of record, a dated statement, signed by a physician in good standing, certifying to his or her last successful vaccination. Such certificates will be returned, upon request, after incorporation into the University records. Inspection of the scar by the University authorities may be required. (2) A history of previous vaccinations is requested, but need not be in the form of a signed certificate. (3) Re-vaccination will be required of all those not successfully vaccinated within seven years. (4) Unsuccessful vaccination must be followed by a second trial within two weeks. (5) Should the disease at any time appear at or in the vicinity of the University, vaccination must be performed immediately on all those directly exposed who have not been successfully vaccinated within one year. Should the disease become prevalent, vaccination of all members of the University community not successfully vaccinated within one year must be performed.

ORRIN LESLIE ELLIOTT,
Registrar.

APPENDIX IV

THE REPORT OF THE LIBRARIAN

THE GENERAL LIBRARY.

The growth of the library during the year is indicated by the following statement:

Volumes in Library, August 1, 1910.....	143,881
Added by purchase	12,748
Added by gifts and exchange.....	1,424
Added by binding	4,816
<hr/>	
Total volumes added.....	18,988
Less volumes withdrawn.....	437
<hr/>	
Net increase	18,551

Volumes in Library, July 31, 1910.....162,432

When we add to the above figure of 162,432 the 35,000 volumes of the Lane Medical Library, it will be seen that the library had at the close of the year a total of 197,432 volumes, and this number is being increased by purchases averaging about fifteen hundred volumes a month.

The Jarboe collection mentioned last year as having been purchased was not actually received until August, and it is therefore included in the figures stated above. It comprised 1,246 volumes. The only other large group of books acquired was the larger portion of the botanical library of the late Professor William Russell Dudley, numbering 448 volumes. To the Law Library 732 volumes were added, of which 622 were by purchase, 25 by gift and 85 by binding serials. The accessions to this department are largely in continuation of sets already on the shelves. Noteworthy among the new titles added are the American Bankruptcy Reports, Morrison's Mining Reports, and Federal Cases Annotated.

Chief among the donors of the year are Thomas Welton Stanford, Dr. David Starr Jordan, Timothy Hopkins, Dr. John M. Stillman, Col. George L. Anderson, the Canadian Society of Civil Engineers and the Pennsylvania State Library.

On account of the special appropriation for sets, 3,404 volumes have been ordered at a cost of \$7,970.71. Of these, 2,418 volumes have been supplied, at a cost of \$5,271.21, while orders for 986 volumes yet remain outstanding.

The growth of the library by years is interestingly shown by the following table:

GROWTH OF LIBRARY BY YEARS.

At the time of opening,	1891.....	3,000
Year ending July 31st,	1892.....	5,030
" " " "	1893.....	7,572
" " " "	1894.....	4,366
" " " "	1895.....	3,640
" " " "	1896.....	9,898
" " " "	1897.....	3,945
" " " "	1898.....	3,848
" " " "	1899.....	3,395
" " " "	1900.....	6,957
" " " "	1901.....	8,979
" " " "	1902.....	9,415
" " " "	1903.....	6,506
" " " "	1904.....	4,956
" " " "	1905.....	4,425
" " " "	1906.....	4,829
" " " "	1907.....	7,014
" " " "	1908.....	15,056
" " " "	1909.....	14,398
" " " "	1910.....	16,652
" " " "	1911.....	18,551
		<hr/>
		162,432

To make it a matter of record and at the same time to show in a general way the character of the accessions, the following table of the allotments from the Jewel fund is annexed:

UNIT DISTRIBUTION OF THE APPROPRIATION FOR BOOKS, 1910-1911.

DEPARTMENT	Units	Amount
Greek	5	\$465.75
Latin	5	465.75
Germanic Languages	7	652.05
Romanic Languages	7	652.05
English Literature and Rhetoric	8	745.20
English Philology	3	279.45
Biblical History and Literature.....	$\frac{1}{2}$	46.58
Philosophy	4	372.60
Psychology	4	372.60
Education	4	372.60
History	12	1,117.80
Economic and Social Science.....	8	745.20
Graphic Art	2	186.30
Mathematics	4	372.60
Applied Mathematics	1	93.15
Physics	5	465.75
Chemistry	6	558.90
Botany	3	279.45
Systematic Botany	3	279.45
Physiology and Histology	5	465.75
Zoology	4	372.60
Entomology and Bionomics	2	186.30
Geology and Mining	7	652.05
Civil Engineering	4	372.60
Mechanical Engineering	4	372.60
Electrical Engineering	1	93.15
Medicine:		
Anatomy	3	279.45
Pharmacology	3	279.45
Bacteriology	3	279.45
General Literature	20	1,863.00
Bibliography	$2\frac{1}{2}$	232.87
Hopkins Railway Library	3	279.45
Special:		
Economics	1	93.15
Bionomics	1	93.15
Archaeology	1	93.15
Law	1	93.15
Transportation charges		375.45
		\$15,000.00

The unusually large number of accessions has somewhat exceeded the capacity of the classification and cataloguing departments. Miss Hays reports 15,912 volumes as the number classified, while according to Miss Sutliff 15,640 volumes have been catalogued. The department was handicapped by the transfer of Miss James to the Lane Medical Library and by the resignation of Miss Bigley. Some reinforcement has been given for the coming year and it is hoped that all arrears may be cleared away. The number of cards added to the catalogue is 44,749, of which 11,156 were obtained from the Library of Congress and 1,420 were supplied by the American Library Association.

In October the subjoined circular letter was sent to the respective departments represented in the unit appropriations:

"DEAR SIR:

"Members of some of the departments have from time to time expressed a wish that they might be supplied with catalogue cards showing the books received at the library at the request of their respective departments. The library will now undertake to supply cards to departments desiring them. They will be sent out monthly and will represent the books listed in the Accessions List of that month. Each department will receive cards only for books purchased at the request of that department.

"Inasmuch as the preparation of these cards involves some time and expense, the library does not wish to send them unless they will be of some real use and will be properly filed and cared for.

"Herewith please find cards for books purchased at the request of your department and included in the October Accessions List. Shall we continue to send such cards to your department?"

This offer met with a most cordial acceptance and the cards have since been regularly supplied to most of the departments.

By force of circumstances the library binding is still done in San Francisco, lots of one hundred or more volumes being shipped there once or twice a month. During the year 3,581 volumes have been bound at a cost of \$3,836.26. About two-thirds of the material bound consists of serials and other continuations received in unbound form, while the remainder consists of books so worn by use that rebinding is necessary.

The work at the loan desk has gone along with very little friction and apparently it has been done efficiently. The number of books issued varies slightly from the record of last year. Mr. Goodwin's report of the circulation is as follows:

CIRCULATION—1910-11.

August	1,250	February	17,875
September	18,800	March	15,893
October	22,312	April	18,257
November	18,856	May	8,814
December	13,204	June	1,182
January	12,559	July	506
Total			149,508

While the growing resources of the library enable it to more nearly meet the demands made upon it, it is unreasonable to expect that it can ever do so completely. During the past year we have borrowed from the following libraries:

University of California.....	38 vols.
Yale University	16 "
Library of Congress.....	11 "
University of Michigan.....	5 "
California State Library.....	3 "
Harvard College	3 "
Columbia University.....	3 "
New York State Library.....	2 "
University of Chicago.....	1 vol.
82 vols.	

We have been able in a measure to reciprocate for these courtesies by lending to five libraries an aggregate of 25 volumes.

The personnel of the staff for the year was as follows:

Librarian, George Thomas Clark.

Assistant Librarian, with supervision of stacks and loans, John Edward Goodwin.

Stenographer, Mary Jeannette Woodruff.

Chief of Order Department, Sydney Bancroft Mitchell.

Assistant, Sylvia Della Stinson.

Classifier, Alice Newman Hays.

Assistant, Mira Burnett Bennett.

Chief Cataloguer, Helen Binninger Sutliff.

Cataloguer, Elizabeth Hadden.

Cataloguer, May Franklin.

Cataloguer, Anna Gertrude Hall.

Cataloguer, Della Thompson.
Filing Clerk, Marguerite Brown.*
Bookmarker, Joseph Paul Cottrell.*
Reference Librarian (first semester), Helen Lathrop.
Reference Librarian (second semester), Maida Rossiter.
Assistant Reference Librarian, Blanche Julia Mobley.
Chief of Serial Department, Edith Margaret Coulter.
Assistant, Louise Ophüls.
Loan Desk, Lucia May Brooks, Charles V. Park, Harold Manley Tennant,* Ollis Willard Newman,* Thomas Powderly Martin.*
Bindery Assistant, Hannah Lillian Todd.
General Assistant, Sherman Lawrence Black.*
Librarian in charge of Medical Department, Frances Sophia Courtenay James.

*Student assistant working less than full time.

The staff has lost some very efficient members from various causes. Mr. Mitchell and Miss Coulter resigned to accept positions elsewhere which seemed to offer more inducements. Miss Lathrop resigned to be free to spend considerable time abroad. Miss Mobley resigned on account of marriage.

Frequent changes in the staff are regrettable, for the reason that those leaving take with them an accumulated experience which is a valuable aid to efficient service. We have been fortunate in those appointed to fill the vacancies, however, and can reasonably expect that the service will be no less efficient in the future than it has been in the past.

The annual meeting of the American Library Association was this year held at Pasadena, May 18-25. Stanford University Library was represented by the Librarian and six members of the staff. After the meeting a party of about one hundred of the Eastern delegates journeyed up the coast, visiting Stanford May 31st as the guests of the University.

THE LANE MEDICAL LIBRARY.

The administration of the Lane Medical Library, a trust, was transferred to the Trustees of the University in January, 1910. At their meeting in March a resolution was passed directing that the Librarian of the University take charge of the Lane Library, consulting as to its needs with the Medical Library Committee of the faculty. The Librarian met with that committee on April 9th. The needs of the library were considered and an estimate of expenses for the ensuing year was prepared. For financial reasons it seemed best that the committee retain active supervision of the library until appropriations for the new academic year be-

came available. At the beginning of June, 1910, however, Miss James was transferred from the Catalogue Department at Stanford to the active charge of the Medical Library.

The Lane Library at present occupies two rooms on the second floor of the Cooper College building, with an overflow of books in a room on the third floor and a large collection of duplicates stored in another room on the fifth floor.

Owing to incomplete records, the number of volumes can be only approximately stated, but exclusive of duplicates it is about 35,000. About two-thirds of the collection consists of medical serials, many of which at the time of transfer were unbound. A dictionary catalogue has been commenced, but as yet it represents only a fraction of the entire collection. The books have yet to be classified and numbered. There is a fairly accurate record of the periodical publications showing the condition of each, i. e., the volumes in the library, whether bound or unbound, and the volumes needed to complete the sets. There is much to be done to put the collection into good, usable condition. Through the courtesy of Cooper Medical College, the former assistant librarian, Mr. D. M. Belfrage, has remained in charge of the work at the loan desk, so that Miss James has been free to devote most of her time to the collation and preparation for the bindery of the unbound serials. During the year 2,435 volumes were sent to the bindery. It is estimated that about 600 volumes yet remain to be bound, in addition to a large mass of material which cannot be put in permanent form until lacking numbers have been supplied.

The library is indebted to Dr. G. C. and Dr. S. E. Simmons of Sacramento for the gift of the medical library of their father, the late Dr. G. L. Simmons, a collection of about 1,000 volumes. It contains much material valuable for the history of medicine in California.

Dr. Emmet Rixford of the Cooper College faculty has been devoted to the upbuilding of this library from its inception in 1895. He has very kindly sent me a brief outline of its history and in order to make it a permanent record it is here included:

"It had long been a cherished plan of Dr. L. C. Lane and his wife to leave the remainder of their fortune, after having built Lane Hospital and Cooper Medical College buildings, to Cooper College for the endowment of the Lane Medical Lectures and the founding and endowment of a great medical library for the benefit of the college and of the medical profession, and each made a will leaving all the property to the other, it being arranged that the survivor should carry out those plans. Mrs. Lane's death following closely on that of Dr. Lane, in 1902, left the plans unfulfilled, but Mrs. Lane bequeathed to Cooper Medical College all that is permitted by the law of the State of California for charitable purposes or to a corporation, viz., one-third of her estate "for the erection and

maintenance of a medical library and a special library building therefor, said library to be named 'The Levi Cooper Lane Library of Medicine and Surgery.'"

In 1903, out of moneys received from the estate of Mrs. Lane, the directors of Cooper Medical College bought a lot having an area of about 11,000 square feet on the southeast corner of Webster and Sacramento streets, this being considered a suitable site for the proposed library building.

On August 29, 1906, the Lane Medical Library was formally created by resolution of the directors of Cooper College and the library of the college, comprising about 8,000 volumes, was made the nucleus thereof. Shortly thereafter a collection of some 30,000 volumes arrived, having been purchased from the New York Academy of Medicine, the same being its collection of duplicates, chiefly the library of the New York Hospital.

Exclusive of duplicates the library numbers approximately 35,000 volumes of which about 25,000 are bound, making this the sixth or seventh largest collection of medical books in the United States. The library is particularly rich in files of American, English, German and French periodicals, most of which are complete from their beginning.

The endowment for the library being largely in unproductive real estate the available funds for library expense and the purchase of books amounted to but \$1,200 a year after taxes were paid. Cooper College contributed the room and the salary of the assistant librarian, so that all of the \$1,200 might be spent for books and subscriptions to periodicals.

About 136 periodicals are received regularly, but from 1906 to 1910 no funds were available for binding, so that when the library was transferred to Stanford University there had accumulated a large amount of valuable material which was but poorly accessible because unbound.

The library of Cooper Medical College, which, as previously stated, became the nucleus of the Lane Medical Library, took tangible shape in 1895, having then but 300 volumes, mostly donations by members of the faculty. By donation, exchange and purchase, as the college could appropriate funds therefor, the collection grew until, in 1902, it contained about 7,000 volumes, when it was further increased by the addition of Dr. Lane's personal library to 8,000 volumes and some 10,000 pamphlets.

In January, 1910, Cooper Medical College deeded its various properties to the Leland Stanford Junior University, the Lane Medical Library trust with its properties and collection of books was also transferred to the trustees of the university and in July, 1910, the library was put in charge of the librarian of the university.

GEORGE THOMAS CLARK,
Librarian.

APPENDIX V

STUDENT ADVISER.

The work of the Student Adviser has been of the same general personal nature as outlined during the first year of the existence of this office.

Three hours daily have been given to personal consultation with students. First year men who have fallen below the scholarship standards have been interviewed with the object of discovering the reasons for their failures. An effort has been made to assist such men in obtaining proper ideals of university work.

Numerous inquiries from parents concerning the general progress and deportment of their sons have been answered. In some instances regular reports have been sent to parents and guardians.

Much time has been given to association with students in the various lines of student activities, and to the work of the University Conference.

The University Conference, an organization of upper class men, seeking to co-operate with the faculty student affairs committee in matters of discipline and in other matters of more general interest, has served a useful function during the past year.

As a medium for the exchange of faculty and student opinion it has done much to bring about a hearty co-operation in the solution of problems which in former years have sometimes occasioned serious difficulties.

An extended report upon athletic conditions in general, and more especially of facts bearing upon the abolition of freshman intercollegiate athletics, was prepared and presented to the president and his athletic committee. The question was fairly and intelligently discussed and the result was the abolition of freshman intercollegiate athletics without serious objections from the student body.

A proposed limitation upon social activities was discussed with the Student Affairs Committee and no action was taken by that committee. In some of these instances faculty opinions prevailed and suggestions by faculty committees were carried out. In others, student opinions prevailed and proposed regulations were altered or dropped. In all cases a perfect understanding was reached and much possible friction avoided.

In the field of student control, the conference has directed its efforts more to the presentation of cases calling for discipline than to dealing directly with such cases when they have arisen.

Objectionable features in public initiations have been eliminated. A committee from the conference met with the sophomore class and severely censured certain indiscreet acts by individual members of the class.

The Junior Plug Ugly was conducted under the control of the conference and the poster and manuscript of the play were handed to the student adviser for censorship. The rush was held under rules drawn up by the conference and all objectionable features of former years were completely eliminated.

Through a meeting with representatives of the various fraternities and Encina Hall public sentiment against certain objectionable conduct by the men on the day of Pan Hellenic was crystallized and the evil effectively abolished.

The Conference co-operated with the faculty Student Affairs Committee in carrying into effect the regulations prohibiting hazing in any form. It also met with this committee for the discussion of several individual cases of discipline.

In conjunction with the Advisory Board of the Alumni Association, it is putting into execution a plan for eating clubs upon the campus and by properly directing student efforts, it aided the Guild Board in securing a site for a detention hospital.

Joint meetings have been held with the Young Women's Conference for the consideration of certain phases of social activities and other matters of common interest to the men and women of the University.

The result of this work has been the development of a sense of responsibility among the upperclassmen for the maintenance of good order and high ideals in student life.

On the whole, it is safe to say that the conditions of student life have never been better than at the present time. The moral standard is exceptionally high and statistics show a marked improvement in scholarship.

ALMON E. ROTH,
Student Adviser.

APPENDIX VI

THE MEMORIAL CHURCH.

Services of public worship have been maintained during the past academic year as follows:

Daily, at 8 a. m., in the vestry of the Memorial Church, and on Sunday in the old chapel. The total attendance at the daily service was 1,612, an average of 12. The attendance on Sundays aggregated 5,543, an average of nearly 200. This does not include Baccalaureate Sunday. The Chaplain officiated at all services, making addresses often at the daily service, and preaching on alternate Sundays. In addition, he has addressed various gatherings of students on subjects of manners or morals.

Acting under the authority of the Board of Trustees, the Chaplain invited the following-named clergymen of different denominations to preach at the chapel service on alternate Sundays:

Rev. A. W. Palmer, Oakland, Congregationalist.
Rev. G. C. Eldridge, Berkeley, Presbyterian.
Rev. N. K. Guthrie, San Francisco, Presbyterian.
Rev. Matt Hughes, Pasadena, Methodist.
Bishop Hughes, San Francisco, Methodist.
Bishop Nichols, San Francisco, Episcopalian.
Rev. E. V. Shayler, Seattle, Episcopalian.
Bishop Bell, Berkeley, United Brethren.
Rev. E. C. Hodgkin, Los Angeles, Unitarian.
Rabbi Kaplan, San Francisco, Hebrew.
Dr. Brougher, Los Angeles, Baptist.
President Baer, Los Angeles, Presbyterian.
Rev. W. B. Hinson, Portland, Baptist.
Rev. Dana W. Bartlett, Los Angeles, Congregationalist.
Rev. Robert Freeman, Pasadena, Presbyterian.

In addition to preaching and making addresses, the Chaplain has given a course of lectures in the University on Biblical history and literature.

The Chaplain has visited and addressed the fraternities on the Campus; entertained students at his home; called on all students committed to his care or in need or distress; visited halls and lodgings; visited every sick

student of whom he had knowledge; attended all students in hospital, and kept office hours daily from 9 to 12 for consultation with students and others.

During the year parcels of books have been sent to the Seamen's Institute; flowers, etc., to the Old Ladies' Home, the City and County Hospital and the Children's Hospital; nearly \$400 was collected and contributed to the Red Cross for the Chinese Famine Fund. In this practical manner and by meetings of groups of students, the idea of helpfulness to others has been encouraged.

Under Mr. Buehrer the choir has done good and efficient work.

D. CHARLES GARDNER,
Chaplain.

APPENDIX VII

THE LELAND STANFORD JUNIOR MUSEUM.

Most of the work of the year was confined to the care of the building and the collections, the working force being reduced to the least possible number in the interest of economy.

A number of small donations were made, mostly of Stanford historical matter.

The most important event of the year was the opening of the South Art Gallery, containing the greater part of the Thomas Welton Stanford Collection of paintings. This collection has received unstinted praise from both the visiting public and art critics, and very laudatory press notices of the opening were given. This is not to be wondered at when it is taken into consideration that the artists represented in the collection are Minderhout Hobbema, James Giles, R. S. A., John Frederick Herring, Lineur, Van den Houten, Francis Snyders, W. J. Laidlay, David Bates, Julian M. Price, J. W. Ready, William Melby, Elijah Walton, F. G. S., W. Henry, W. Koek-Koek, E. Wake Cook, T. R. Miles, John Glover, Herr Schnars-Alquist, Louis Buvelot, William Hart, William Shiels, R. S. A., Patrick Nasmyth, Sam Bird, Emil Bayard, G. Koken, John Weenix, Gerard Lairese, Salvator Rosa, Melchoir Hondécouter, Marie Angelic Kaufman, George Earl, Heinrich Rasch, Ten Kate, Kuardabassi, and E. G. Lewis.

In addition to those already hung are the twenty-four paintings that were damaged in 1906. The Board of Trustees has engaged the services of Mr. Henry Raschen, the noted expert in the restoration of paintings, to repair and restore these. He has also restored the painting presented by Trustee Horace Davis, which was badly damaged at the same time. A number of other canvases belonging to the Museum were likewise gone over, restored and varnished. The work was thorough and satisfactory.

These paintings will be added to the other collections as soon as they are sufficiently dried.

On July 17th the Museum entertained the visiting members of the N. E. A., who spent several hours on the grounds and in the building.

The attendance during the year has been very good. The fact that the building is so far from the car line has a tendency to deter visitors from coming over.

HARRY C. PETERSON,

Curator.

APPENDIX VIII

GIFTS.

The following gifts to the University for the year deserve special mention:

Department of Medicine:

From Dr. Adolph Barkan.....	\$10,000
From Mr. Charles G. Lathrop.....	5,000
From Mr. Antoine Borel.....	2,500
From J. H. Meyer.....	2,500
From Edward Coleman.....	2,500
From Cooper Medical College.....	20,000
From Dr. Emmet Rixford.....	20
Total	\$42,520

From Dr. G. L. Simmons, 1,000 books and 300 pamphlets.

From Dr. W. R. Cluness, 200 volumes.

From Dr. C. M. Richter, 10 volumes.

From Dr. W. Ophüls, 45 books and 10 pamphlets.

From Dr. R. L. Wilbur, 102 books and 1,010 pamphlets.

From the American Association of Obstetricians and Gynecologists,
Philadelphia, 10 volumes.

From the American Pediatric Society, Washington, D. C., 4 volumes,

From various societies, 100 volumes of reports.

Laboratory of Pharmacology:

From the Bureau of Plant Industry, Washington, D. C., a collection of
crude drugs and certain photographs of medicinal plants.

From the Bureau of Chemistry, Department of Agriculture, Wash-
ington, D. C., a loan collection of crude drugs.

From Sharp & Dohme, Baltimore, Md., a collection of drug prepara-
tions.

From Parke, Davis & Co., Detroit, Mich., drug specimens.

From Armour & Company, Chicago, specimens of ductless glands.

Department of Education:

- From the American Book Company, a collection of text-books numbering approximately 100 volumes.
- From the State Superintendent of Public Instruction, a set of the State Series text-books.
- From D. C. Heath, certain charts and readers.
- From Ginn & Co., Doub & Co., Bobbs-Merrill Co., and others, various text-books.

The University:

- From the Alumni Association, a portrait of President Jordan, painted by Mrs. Emma Curtis Richardson of San Francisco.

Department of English:

- From Dr. F. H. Bartlett, New York City, a portrait of Mrs. Eleanor Brooks (Pearson) Bartlett, instructor in English, 1898-1902, who died in 1909.

Department of History:

- From Mrs. Lucy A. Brown, Chicago, Ill., \$25, for the purchase of books in connection with the lecture course on international conciliation.

Department of Geology:

- From Mrs. S. F. Lisk, Frankfort, Ind., a collection of minerals, shells and polished wood specimens.

Department of Botany:

- From William Russel Dudley, since deceased, his private collections of plant specimens, numbering 50,000.

Department of Mechanical Engineering:

- From the Hess-Bright Company, a set of line shaft ball bearings and fixtures for the pattern shop main drive, having a value of \$328.

Department of Electrical Engineering:

- From the National Carbon Company, Cleveland, Ohio, one cabinet containing specimens of manufactured carbon products.

The University Library:

- From Mr. Thomas Welton Stanford, 185 books.
- From Dr. David Starr Jordan, 57 books and 150 pamphlets.
- From Mr. Timothy Hopkins, 20 books and 59 pamphlets.
- From Mr. Horace Davis, 6 books and 48 pamphlets.

From Dr. John Maxson Stillman, 23 books.
From the Library of the University of Heidelberg, 386 pamphlets.
From the Library of the University of Berlin, 277 pamphlets.
From the Library of the University of Erlangen, 260 pamphlets.
From the Library of the University of Jena, 196 pamphlets.
From the Library of the University of Halle, 163 pamphlets.
From the Library of the University of Königsberg, 69 pamphlets.
From the Library of the University of St. Petersburg, 45 pamphlets.
From the Library of the University of Tübingen, 37 pamphlets.
From the Library of the University of Upsala, 35 pamphlets.
From Cornell University, 2 books and 94 pamphlets.
From the University of Chicago, 4 books and 64 pamphlets.
From the California Department of State, 14 books and 39 pamphlets.
From the Wisconsin State Department, 3 books and 77 pamphlets.
From various institutions, societies and individuals, additional volumes
to the number of 588 and pamphlets to the number of 3,052.
From the publishers and by gift from individuals, 145 serial publica-
tions.

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS

1912

TRUSTEES' SERIES

No. 21

NINTH ANNUAL
REPORT OF THE PRESIDENT
OF THE
UNIVERSITY
FOR THE YEAR ENDING JULY 31, 1912

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1912

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS

TRUSTEES' SERIES

No.		Date
1.	The Leland Stanford Junior University. A pamphlet of information.....	(No date)
2.	Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3.	Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4.	Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5.	Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6.	Address on "The Right of Free Speech" by Jane Lathrop Stanford to the Board of Trustees....	April 25, 1903
7.	Petition filed in proceedings to establish and construe University Trusts.....	June 16, 1903
8.	Decree in proceeding to establish and construe University Trusts.....	July 3, 1903
9.	Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees.....	July 6, 1903
10.	Organization of the Faculty of the University....	March 31, 1904
11.	Report of the Organization Committee of the Trustees upon the Organization of the University Faculty.....	March 31, 1904
12.	First Annual Report of the President.....	December 31, 1905
13.	Second Annual Report of the President.....	April 30, 1906
14.	Third Annual Report of the President.....	December 31, 1906
15.	Fourth Annual Report of the President.....	December 31, 1907
16.	Trustees' Manual	November 1, 1908
17.	Fifth Annual Report of the President.....	December 31, 1908
18.	Sixth Annual Report of the President.....	December 31, 1909
19.	Seventh Annual Report of the President.....	December 31, 1910
20.	Eighth Annual Report of the President.....	December 31, 1911
21.	Ninth Annual Report of the President.....	December 31, 1912

TABLE OF CONTENTS

PRESIDENT'S REPORT.

Improved Character of Student Body.....	5
Responsibility of Faculty.....	6
Student Control	6
The Student Adviser.....	7
Building Activities	7
Fellowship in Psychic Research.....	8
Faculty Changes and Absences.....	8
Passing of Cooper Medical College.....	10
Death of Dr. Henry Gibbons, Jr.	10
New Appointments in Medicine.....	11
New Fellowships	13
The President's Peace Work.....	13
Gifts	13

APPENDICES.

I. Departmental Reports :

Greek	18
Latin	19
German	20
Romanic Languages	21
English Literature and Rhetoric.....	23
English Philology	24
Philosophy	25
Psychology	26
Education	27
History	28
Economics	30
Political Science	30
Law	31
Graphic Art	32
Mathematics	33
Applied Mathematics	33
Chemistry	34
Physics	37
Botany	37
Dudley Herbarium	39
Physiology and Histology.....	39
Physical Training and Personal Hygiene.....	41
Encina Gymnasium	41
Roble Gymnasium	42
Zoology	43
Entomology and Bionomics.....	44

6522
25644

I.	Departmental Reports—Continued.	
	Geology and Mining.....	46
	Civil Engineering	49
	Mechanical Engineering	50
	Electrical Engineering	52
	Medicine	52
	Anatomy	54
	Bacteriology	55
	Medicine	56
	Obstetrics and Gynecology.....	58
	Pathology	58
	Pharmacology	59
	Surgery	59
	Hygiene and Public Health.....	61
	Lane Hospital	61
	The Marine Biological Laboratory.....	62
II.	Reports of Committees:	
	Student Affairs	64
	Delinquent Scholarship	67
III.	Report of the Registrar:	
	Statistics of Registration.....	69
	Classification by Major Subjects.....	71
	Distribution of Entering Class.....	72
	Registration of Studies.....	75
	Petitions Before Committee on Registration.....	75
	Statistics of Graduation.....	76
	The Faculty:	
	Improvement of Scholarship.....	77
	Discontinuance of Examinations.....	78
	Graduate Study and Advanced Degrees.....	78
	Degree of Bachelor of Laws.....	78
	Minority Report of Committee of Ten.....	79
	Powers of Executive Committee.....	80
	University Credit for Special Work.....	81
	Method of Voting.....	82
IV.	Discontinuance of August Entrance Examinations.....	83
V.	The Report of the Librarian.....	86
	Classification	87
	Catalogue Department	89
	Serial Department	90
	Lane Medical Library.....	90
VI.	Appointment Secretary.....	93
VII.	Dean of Women	94
VIII.	Student Adviser.....	96
IX.	The Memorial Church.....	97
X.	Leland Stanford Junior Museum.....	100
XI.	Publications of the Faculty.....	101

REPORT OF THE PRESIDENT

STANFORD UNIVERSITY, CAL., December 30, 1912.

*To the Honorable Board of Trustees,
Leland Stanford Junior University.*

GENTLEMEN:

Permit me to present the following report of the work of the University for the academic year 1911-12.

The year has been without overshadowing incident. This is the normal condition of the life of the University. The internal affairs of the institution, those relating to instruction and those relating to the character and ideals of the student body, have never before been in so satisfactory a condition. One phase of this is shown in the fact that there have been fewer failures in work (forty-five in all) than in any previous year. In the earlier years, 1909-10, and 1910-11, the number dropped from the rolls for failure in university work was sixty-eight and fifty-nine respectively. In the years from 1902-1909 the number of similar failures was about twice as great. This change is related to the rising condition in morals and behavior, and to the fact that idle and dissipated young men being not welcome at Stanford prefer to go elsewhere. In the quick response to more severe demands in scholarship and to higher ideals of personal character, I find great encouragement for the future of higher education in America.

It is true that in American colleges many students use the institution as a means of social enjoyment and for other ends unrelated to education. The remedy for this is not found in prescribed courses of study, which are fitted to the needs of no one, and which make matters worse. It is found in the insistence by the

University faculty that the college is a place for intellectual and moral training and that those who do not want such training should seek their pleasure elsewhere. There is not much virtue in the college as a place for general culture to the student who has no intellectual ends to serve. Broadly speaking, culture worthy of the name comes from no particular study and from no grouping of subjects. It comes mainly either from good work performed for the love of it, or from good work undertaken with a distinctly vocational purpose.

The various forms of educational waste—dissipation, idleness, snobbishness, abuse of athletic sports—all these mean indifference or neglect on the part of the faculty. So long as collegiate training of young men and university research are entrusted to the same group of teachers, these teachers cannot escape responsibility for the moral and intellectual ideals of those under their charge.

**Responsibility
of
Faculty**

Perhaps the most important forward move of the year at Stanford University is the acceptance of student control in the maintenance of moral ideals. The student body has undertaken to enforce all University regulations as to student conduct, and this on the basis of the highest ethical standards. Those whose presence works injury to their fellows or to the good name of the University are required to withdraw. For the achievement of this desirable condition especial credit is due to the patient work of Professor Arthur Bridgman Clark, chairman of the Committee on Student Affairs.

**Student
Control**

In the student annual, "The Quad" for 1912, the writer used the following words concerning this matter:

Occasionally in reminiscent mood, we old-timers refer to the days from 1891 to 1895 as the Golden Age of the University. But when we settle down to historic accuracy, we know that the Golden Age of Stanford is now. The Golden Age of any university is that time when every man and every woman who enters it is the better, morally as well as intellectually and physically, for coming. We believe that this is true today at Stanford. We know that it was not true in the fine warm-hearted youthful days when the University had no rules and was controlled by moral suasion. There may be universities in which it is still not true. It may

be that they will meet their problems in some other way; but we shall solve ours in our own fashion.

"Student Control," as we understand it at Stanford, seems to us a crystallization of this Golden Age. It does not mean that moral or intellectual fashions are set by immature youth. The faculty is here to set standards of living as well as of thinking. It does not mean merely that the students will vote on matters which concern their various activities. It does not stop at a pledge from the students that they will cut out their own delinquents and delinquencies. Its essence is the realization that the highest ideals of student life their teachers can set before them have been understood and loyally accepted. It is a guarantee that in this Golden Age, and in all that has made it golden, the student body is an active and integral part.

The students of today fix the traditions of tomorrow. The students of today are the alumni of tomorrow. On their shoulders rests the welfare of the University. It is for them to say how long the Golden Age shall endure.

In the matter of shaping student methods and traditions, the work of the student adviser, Mr. Almon Eugene Roth, for the past three years has been a factor of the greatest importance. The experiment of assigning to a beloved and respected graduate student the work of setting standards for entering classes has been an unqualified success. Mr. Roth leaves the University to engage in the practice of law. The same experiment will be repeated by the appointment as his successor of the president of the student body, Mr. Karl Ludwig Schaupp. His well-tested ability to control and his loyalty to ideals promise for him equally excellent results.

A leading feature of the year's work has been the erection in San Francisco of a library building to house the Lane Medical Library, the building being put up with the money left for that purpose by the late Mrs. Levi Cooper Lane.

The Student Adviser During the year the rebuilding of the Memorial Church has gone on steadily, the walls being restored in the most solid manner known to builders. Thus far, no changes from the original form and ornamentation have been made. Much of the mosaic work and all of the stained glass windows have been unharmed.

A new power house has been built to the southeastward of the

Quadrangle and the buildings formerly used for boilers and machinery for heating and lighting have been adapted to the uses of the Department of Civil Engineering.

During the year Mr. Thomas Welton Stanford has made permanent provision for the creation of a fellowship known as the **Fellowship in Psychic Research** Thomas Welton Stanford Fellowship for Research in Psychic Phenomena. Dr. John Edgar Coover, a graduate of Stanford, has been selected for this work for the year 1912-1913.

In the Faculty of the University a few changes have taken place during the year:

In Greek, Assistant Professor Ernest Whitney Martin has been made Associate Professor. In Latin, a similar promotion has been granted to Benjamin Oliver Foster.

Faculty Changes and Absences In Romanic Languages, Robert Edouard Pellissier returns from study in Harvard University to an instructorship in French.

In German, Assistant Professor Macy Millmore Skinner has been made Associate Professor and Instructor Hermann Johann Hilmer has been made Assistant Professor. In the sabbatical absence of Dr. Skinner his work has been taken by Acting Assistant Professor George W. Hauschild.

In English, Associate Professor Raymond Macdonald Alden has resigned to accept the chair of English in the University of Illinois. Miss Edith R. Mirrieles (Stanford 1907) and Mr. Van Wyck Brooks (Harvard 1907) have been made instructors, and Everett Wallace Smith (Stanford 1899) has been promoted from an instructorship to be Assistant Professor of English.

In History, Dr. Edward Benjamin Krehbiel has been made Professor of Modern European History. Assistant Professor Henry Lewin Cannon has been made Associate Professor of History, and Mr. Edgar Eugene Robinson, a graduate of Wisconsin University, late Assistant Professor of History at Carleton College, has been made Assistant Professor of American History, succeeding Professor Herbert E. Bolton, who takes the chair of Spanish-American History in the University of California. Instructor Percy Alvin Martin has been made Assistant Professor of History.

In Economics, Professor Alvin Saunders Johnson was called from Chicago University as professor and department executive to succeed Professor Allyn Abbott Young, who has accepted the chair of Economics in Washington University, St. Louis. At the end of a most successful year Dr. Johnson has accepted a corresponding chair at Cornell University and the chair has been filled by the appointment of Professor Murray Shipley Wildman. Dr. Wildman holds the doctor's degree from the University of Chicago, and has held the chair of Economics and Commerce in Northwestern University since 1909. In the sabbatical absence of Dr. Whitaker for the second semester, Mr. Donald Frederic Grass and M. Lippitt Larkin, graduate students from the University of Chicago, have been made instructors, their work lying in the direction of the vocational applications of Economics. At the end of the year, 1911-12, Associate Professor Harry Alonzo Millis accepted the chair of Economics in the University of Kansas. Mr. Stephen Ivan Miller, teacher of Economics in the Polytechnic High School of Los Angeles, was appointed instructor. Mr. Miller is a graduate of Stanford in the year 1898, and has carried on advanced studies at the University of Wisconsin and at Heidelberg. Instructor Ira B. Cross has been made Assistant Professor of Economics.

In the Department of Law, Professor Charles Henry Huberich was absent for the year on sabbatical leave, devoting himself to his publications and to the practice of American law in Berlin, withdrawing from the University at the end of the year. His place was taken for the year by Professor Howard Luther Smith of the University of Wisconsin. Professor Wesley Newcomb Hohfeld was also absent for the year on sabbatical leave. Associate Professor Joseph Walter Bingham was made Professor. Marion Rice Kirkwood of the law faculty of the University of Oklahoma was appointed Assistant Professor. Mr. Kirkwood is a graduate of Stanford (J. D. 1911).

In Education, Assistant Professor Lewis Madison Terman has been made Associate Professor and Instructor Jesse Brundage Sears Assistant Professor.

In Psychology, Professor Lillian Jane Martin has been absent on sabbatical leave for the year, engaged on work in Germany.

In Philosophy, Mr. Har Dayal from Oxford has been appointed

lecturer on Indian Philosophy, a temporary appointment ending September, 1912.

In Graphic Arts, Mr. Henry Varnum Poor (Stanford 1910) has acted as instructor in the sabbatical absence of Assistant Professor Robert Barthlow Harshe.

In Physiology, Mr. Frank Walter Weymouth (Stanford 1910) has been made instructor.

In Botany, Mr. James I. W. McMurphy (Stanford 1908) was appointed instructor.

In Roble Gymnasium, Miss Maud Cleveland, assistant, was appointed instructor.

In Chemistry, Professor Edward Curtis Franklin has been absent for the year, acting as Chemist of the National Public Health Service at Washington. In his absence Mr. George S. Bohart (Stanford 1911) has been employed as instructor. Miss Alice Ruth Berger (Stanford 1908) has been appointed Acting Instructor in Analytical Chemistry.

The beginning of the fourth year of Medicine is marked by the dissolution of the corporation of the Cooper Medical College, its last class having graduated and all its property being now placed in the hands of the trustees of Stanford University for purposes of medical education.

In this department I have to note the death of Dr. Henry Gibbons Jr., Professor Emeritus of Obstetrics and late Dean of the Cooper Medical College. Dr. Gibbons was born in Wilmington, Delaware, September 24, 1840, of colonial Quaker stock, and of a family many of whom were members of the medical profession. He was graduated from the San Francisco High School in 1856, at the age of 16 years. He taught school for a time and then entered the Medical College of the Pacific, from which he was graduated in 1863. Immediately after graduating, he went East to do post-graduate work in the University of Pennsylvania, but instead accepted the position of acting assistant surgeon in the United States Army in Washington, D. C. Returning to San Francisco, Dr. Gibbons was associated with his father in the practice of medicine and in the editorship of the Pacific

Medical Journal. He was elected Dean of the Medical College of the Pacific in 1871, which position he retained in this college and its successor, Cooper Medical College, until his death, thus devoting forty years of his life to the cause of medical education. In this institution he was Professor of Materia Medica and Therapeutics from 1871 to 1873, and from the latter date Professor of Diseases of Women and Children until his death on September 27th, 1911. In 1910 he was appointed Emeritus Professor of Gynecology and Obstetrics in Stanford University. Always active in civic affairs, he held the position of Health Officer of San Francisco for three years, and was at different periods member of the Board of Health and of the Board of Education.

In this same department Dr. Joseph Oakland Hirschfelder, Professor of Medicine, has been made at his request Professor Emeritus.

Dr. Alfred Baker Spalding has been made Professor of Obstetrics and Gynecology. Dr. Spalding is a graduate of Stanford (1896) and of Columbia University and has held a similar professorship in the University of California. Other appointments in Medicine are the following: Dr. George B. Somers, Clinical Professor of Gynecology, in charge of the Lane Hospital; Dr. Langley Porter, Clinical Professor of Medicine, assigned to Pediatrics; Dr. Harold P. Hill (Stanford 1898) Clinical Professor of Medicine; Dr. Harry Everett Alderson, Associate Clinical Professor of Medicine; Dr. H. B. Graham, Assistant Clinical Professor of Surgery; Dr. Rufus Lee Rigdon, Albert Brown McKee and Edward Cecil Sewall (Stanford 1898) Clinical Professors of Surgery; Dr. Andrew P. Hoisholt, Clinical Professor of Psychiatry; Dr. Thomas Addis of the University of Edinburgh, Assistant Professor of Medicine; Dr. James Eaves, also of the University of Edinburgh, Instructor in Surgery; and Drs. Florence M. Holschaw, Charles T. Fleischer, Walter W. Boardman, Morton R. Gibbons, W. R. P. Clark, H. W. Gibbons and Walter F. Schaller, Clinical Instructors in Medicine. Dr. Ruskin M. Lhamon, Instructor in Anatomy, has tendered his resignation, to become Professor of Anatomy in the University of Manila. The position has been filled by the appointment of Dr. Edgar D. Congdon of Cornell Medical

College. Dr. Lee Eloesser and Sol Hyman have been made Clinical Instructors of Surgery.

In Geology and Mining, Associate Professor Noah Fields Drake tendered his resignation at the close of the year, to accept the position of state geologist of Arkansas. He is succeeded by Professor Charles F. Tolman, a graduate of the University of Chicago, and since 1905 Professor of Geology at the University of Arizona.

On December 5, 1911, Dr. Branner was awarded by the Academy of Natural Sciences of Philadelphia the Hayden Gold Medal for 1911, "in recognition of the value of your individual contributions to geological science, and of the benefit derived from your able and conscientious discharge of the official trusts confided to you." (Extract from the letter of the Secretary.) Dr. Branner is the fifth American geologist to receive the Hayden Medal.

In Electrical Engineering, Professor W. A. Hillebrand has accepted the professorship in the Agricultural College of Oregon at Corvallis. Mr. Axel Nielsen has been appointed instructor in this department, and Mr. J. C. Clark (M. E. E. Harvard 1912) acting Assistant Professor. In the sabbatical absence of Professor Harris Joseph Ryan for the current year, Mr. John Andrew Koontz (Stanford 1908) and Mr. Eugene G. McCann (Stanford 1911) have acted as instructors.

In Mechanical Engineering, Associate Professor William Rankine Eckart has been raised to the rank of Professor, and Instructor Charles Norman Cross has been made Assistant Professor. As chief mechanic, Mr. F. D. Banham, late of the University Scientific Shop of Cambridge, England, has taken the place of Mr. F. A. Stevens.

In Civil Engineering, Instructor John Harrison Foss has been made Assistant Professor.

The rank of the Librarian, Mr. George Thomas Clark, has been changed from that of Associate Professor to that of Professor. Mr. J. E. Goodwin, Assistant Librarian, has accepted the position of Librarian of the University of Texas, and Mr. S. B. Mitchell, chief of the order department, has accepted a position in the University of California.

During the year the following fellowships have been provided: The Alumni Jordan Medical Scholarship Fund for the aid of medical students; the Bernard Scholarship in Entomology founded by Mrs. Matilda Bernard, widow of the late Henry M. Bernard of the University of Cambridge, England; and a graduate fellowship established by the Advisory Board of the Stanford Alumni Association.

As governing the relation of professors to outside employment, the following resolution has been passed by the University Board of Trustees:

"That the maintenance by salaried professors, exclusive of clinical professors of medicine, of offices for the solicitation and conduct of professional business should be discouraged as tending to impair the desirable devotion to university duties."

For the first semester of the year the President of the University was absent on sabbatical leave. His time was devoted to the work of the World Peace Foundation and was mainly spent in Japan. Sixty-four lectures in the interest of international conciliation were given by him in Japan and Korea. After returning from Japan, the President received from the Emperor Mutsuhito the decoration of the Second Order of the Sacred Treasure of the Meiji. He has also received for services in the cause of peace the gold medal of the Educational Society of Tokyo and the bronze medal of the Société de Conciliation Internationale.

The summer of 1912 was spent by him in the study of the effects of the Civil War on the people of the Southern States as shown fifty years after. In this work, undertaken in behalf of the World Peace Foundation, he was associated with Professor Edward Benjamin Krehbiel and with Professor Harvey E. Jordan of the University of Virginia. Mr. Laurance L. Hill (Stanford 1912) acted as secretary to the commission. In connection with this the President gave in the course of the summer twenty-seven lectures in behalf of international peace.

The University may here record its grateful appreciation of the many gifts received from various sources during the year.

Gifts The list of these gifts follows:

The University:

From Thomas Welton Stanford, \$50,000 to endow the Thomas Welton Stanford Fund for Research in Psychic Phenomena.

From the Advisory Board of the Alumni Association, \$120 for a graduate fellowship.

The University Library:

From Thomas Welton Stanford, \$500 annually for five years for purchase of books on psychic phenomena.

From H. C. Hoover, loan of large collection of books on China.

From David Starr Jordan, 72 books and 338 pamphlets.

From Timothy Hopkins, 17 books and 57 pamphlets.

From Horace Davis, 11 books and 93 pamphlets.

From J. C. Cebrian, San Francisco, a work in Spanish, "History of the Spanish Christian Architecture during the Middle Ages."

From the Library of the University of Basle, 57 pamphlets.

From the Library of the Royal University of Berlin, 352 pamphlets.

From the Cobden Club, 2 books and 50 pamphlets.

From the Library of the Erlangen University, 259 pamphlets.

From the Library of the University of Halle, 220 pamphlets.

From the Library of the University of Heidelberg, 428 pamphlets.

From the University of Kiel, 138 pamphlets.

From Königsburg University, 97 pamphlets.

From Royal Society of Victoria, 321 pamphlets.

From various institutions, societies and individuals, additional volumes to the number of 365 and pamphlets to the number of 3,262.

From the publishers and by gift from individuals, 207 serial publications.

The Lane Medical Library:

From Mrs. O. B. Dodge, \$5,000 endowing the "Henry Lee Dodge Memorial Fund" for the purchase of books for Medical Library.

From Luther J. Holton, \$500 endowing the "Luther J. Holton Fund" for the purchase of books and periodicals.

From Dr. W. R. Cluness, 150 volumes of medical books.

Department of Medicine:

From Directors of Cooper Medical College, \$20,000 endowing the Lane Medical Lectures.

From Mrs. Emily B. Hopkins, \$10,000 endowing a bed in Lane Hospital.

From C. A. Coffin, New York City, \$250 toward Research Fund in Oriental Diseases.

From Alumni Association, \$500 for the establishment of "The Alumni Jordan Medical Scholarship Fund," for the aid of medical students.

Department of Botany (The Dudley Herbarium):

From Mrs. John H. Walker, San Francisco, the late Dr. C. L. Anderson's collection of grasses, mosses and fungi, about 1,000 specimens.

From Associate Professor L. R. Abrams, 840 specimens of Sierra Nevada plants.

From S. B. Parish, 100 specimens of Southern California plants.

From the Department of Agriculture, 92 specimens of Dr. Myer's Chinese collection.

Department of Zoology:

From Professor S. Averinzeff of St. Petersburg, four tanks of marine animals from the equatorial Pacific.

From the Government of Japan, collections of fishes from various sources in Japan.

From Governor General Terauchi, Seoul, Korea, a collection of the fishes of Korea obtained by the Fishery Commission of Chosen.

Department of Chemistry:

From the Pacific Guano Fertilizer Company, San Francisco, samples of a number of fertilizers.

Department of Entomology:

From Mrs. Matilda Barnard, Cambridge, England, a scholarship of \$120 per annum and laboratory expenses.

Department of Geology and Mining:

From Ralph Arnold, \$100 for additions to Arnold collection; set of Tertiary fossils from Oregon and Washington.

From J. C. Branner, fossil plants from Bahia, Brazil; seven boxes of fossils from northern Brazil; specimens of land, fresh water and marine shells from Brazil; two diamond crystals from Minas Geraes, Brazil.

From G. C. Branner, specimen of weathered sandstone.

From B. Bryan, specimens of metallic copper, and crystals of calamine.

From R. H. Black, specimens of placer tin from Alaska.

From N. F. Drake, rock and mineral specimens, silurian fossils and marine shells from China.

From O. A. Derby of Rio de Janeiro, specimens of minerals from Brazil.

From Du Pont Powder Company, samples of powders, dynamite cartridges, fuses and caps.

From H. C. Dudley, Marble, Wisconsin, collection of typical iron ores and of rocks associated with iron.

From Goldfield Consolidated Mining Company, two hundred pounds of ore.

From F. L. Hess, Washington, specimens of hematite, hinsdalite, zirconiferous sandstone, ilmenite quartz pegmatite.

From Edward Hughes, Stockton, elephant tusks, teeth and bones found in dredgings.

From D. M. Folsom, photographs of geologic phenomena.

From F. H. Fowler, photographs of geologic phenomena in the Sierras.

- From H. E. Kramm, Cornell University, specimens of gypsum and manganese ores from Canada.
- From the heirs of Mr. John A. Thoman, through Mrs. S. T. Lisk of Silver Springs, Florida, "The John A. Thoman Natural History Collection," consisting of fifty-one boxes of miscellaneous geological specimens.
- From Dr. M. A. R. Lisboa of Rio de Janeiro, collection of geologic phenomena in Brazil.
- From R. J. McCann, placer miner's rocker and gold nugget from Alaska.
- From R. B. Moran, a collection of Tertiary fossils from Ventura County, California.
- From J. P. Smith, a large number of representative Mesozoic fossils from California.
- From Spring Valley Water Company, San Francisco, a relief map of the bay region of San Francisco.
- From Summer Class in Geology, a fine set of the Tertiary and Mesozoic fossils of Alameda and Santa Clara Counties.
- From Thomas Welton Stanford, 240 specimens of rare Australian minerals.
- From C. A. Waring, land and fresh water shells from northeastern Brazil.
- From W. A. Williams, a set of Tertiary fossils and living shells from Peru and Ecuador.
- From various sources, numerous specimens and miscellaneous minerals.
- Department of Electrical Engineering:
- From the Central Colorado Power Company, a specimen collection of high voltage line insulators and operating devices.
- Department of Latin:
- From Prof. M. M. Skinner, 1 Piranesi etching.
- From Arthur Brown Jr., San Francisco, 1 copy of L'Illustration, with a photograph of Bigot's reconstruction of Imperial Rome.
- Department of Education:
- From American Book Company, D. C. Heath, Ginn & Co., and others, a large number of text books.
- From various State Superintendents and City and County school officials, reports for the year.
- From private individuals, 288 miscellaneous books.
- Department of History:
- From Miss Sallie Brown, Atlanta, Georgia, Avery's History of Georgia; Life and Times of Joseph M. Brown, War Governor of Georgia.
- From the Permanent International Bureau of The Hague, various items and publications relating to International Conciliation.

From Miss Florence Reynolds, Stanford University, "Si Klegg and His Pard" (a rare first edition work on the Civil War).

Department of Law:

From the Stanford Law School Association, a scholarship of \$100.

From Mr. George E. Crothers, San Francisco, a scholarship of \$100.

From Mr. Louis Beedy, Francis V. Keesling and C. F. Doelger, a scholarship of \$100.

Appended herewith are given the customary reports by executive heads of departments, chairmen of committees, and other officers.

Respectfully submitted,

DAVID STARR JORDAN,

December 31, 1912.

President.

APPENDIX I

DEPARTMENTAL REPORTS

GREEK.

The department faculty for the year 1911-12 consisted of Augustus T. Murray, professor; Ernest Whitney Martin, associate professor; and P. A. Knowlton, instructor (Latin and Greek).

The following courses were given:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Murray.....	3. Odyssey.....	3	.....	6
Murray.....	7. Advanced Prose Composition.....	2	3	5
Murray.....	8. Greek Sculpture.....	2	25	.....
Murray.....	11. Greek Tragedy (Reading).....	3	4	6
Murray.....	14. Introductory.....	3	.....	4
Murray.....	16. Seminary.....	2	4	5
Murray.....	17. Rapid Reading.....	2	4	3
Murray.....	18. Greek Epic.....	2	47	.....
Murray.....	19. Greek Tragedy.....	2	.....	64
Martin.....	1. Elementary.....	5	8	7
Martin.....	4. Prose Composition.....	2	3	6
Martin.....	5. Homer.....	3	5	.....
Martin.....	6. Euripides.....	3	.....	5
Martin, Knowlton	13. Rapid Reading.....	1-5	10	10
Knowlton.....	12. Greek Testament.....	2	.....	4
			113	125

AUGUSTUS TABER MURRAY,
Professor of Greek.

LATIN.

In 1911-12 the department faculty consisted of H. Rushton Fairclough, professor; Jefferson Elmore and B. O. Foster, associate professors; P. A. Knowlton, instructor. Courses were also given by E. Whitney Martin, assistant professor of Greek, while equivalent courses in Greek were given by Instructor Knowlton of the Latin Department.

There were registered in the department during the year 34 major students, of whom 12 were graduates. Of these latter, 4 received the degree of Master of Arts.

The following is a tabular statement of the courses given and the enrollment in each:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Elmore.....	1A. Introductory.....	3	5	5
Elmore.....	1. Virgil and Cicero.....	3	13	14
Fairclough and Elmore.....	2. Terence, Cicero and Horace	3	23	.....
Foster.....	2. Terence, Cicero and Horace	3	.....	7
Fairclough.....	2. Terence, Cicero and Horace	3	.....	17
Knowlton.....	3. Justinian.....	2	15	11
Foster.....	4. Prose Composition I.....	2	11	9
Fairclough.....	5. Horace, Satires and Epistle	3	.....	11
Foster.....	6. Livy and Tacitus.....	3	10	.....
Elmore and Knowlton....	7. Prose Composition II.....	2	8	9
Foster.....	8. Roman Comedy.....	3	7	.....
Elmore.....	9. Cicero's Letters.....	2	.....	8
Knowlton.....	10. Petronius.....	2	3	.....
Knowlton.....	12. Lucretius.....	3	.....	8
Fairclough and Foster.....	13. Prose Composition III....	1	3	6
Foster.....	14. Juvenal and Martial.....	2	6	.....
Martin.....	15. Christian Latin.....	2	.....	6
Martin.....	18. Mediaeval Latin.....	3	3	.....
Foster.....	19. Roman History from the Sources.....	3	.....	6
Fairclough.....	22. Seminary Virgil.....	2-6	9	14
Fairclough.....	23. Rapid Reading.....	2	9	14
Martin.....	25. Introduction to Epigraphy	1	5	.....
Foster.....	26. Historical Grammar.....	2	3	.....
Elmore.....	29. History of Rome.....	3	.....	78
Fairclough.....	31. Roman Art and Monuments.....	2	.....	67
Knowlton.....	32. Roman Private Life.....	2	37	.....
Elmore.....	Thesis in Roman History.	1	1	.....
			171	290

Of the courses enumerated above, those indicated as 29, 31 and 32 require no knowledge of Latin.

HENRY RUSHTON FAIRCLOUGH,
Professor of Latin.

GERMAN.

During the academic year 1911-12 the teaching staff of the department consisted of George Hempl and James Owen Griffin, professors; Karl G. Rendtorff and William Alpha Cooper, associate professors; Macy Millmore Skinner and Bruno Boezinger, assistant professors; Herman Hilmer, instructor. Professor Skinner was in Europe during the year, his place being filled by Acting Assistant Professor George William Hauschild.

The following is a tabular statement of the number of students in the various courses:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Cooper, Hauschild, H. Hilmer	1. Elementary	5	69	58
Hempl, Griffin, H. Hilmer, N. Hilmer, Hauschild.....	2A. Second Year Reading...	3	120	110
Boezinger.....	2AA. Scientific Reading.....	3	34	34
Griffin, Hauschild, Boezinger	2B. Second Year Composition	2	58	49
Griffin, Rendtorff.....	3. Classical Drama.....	3	55	58
Griffin.....	4. Modern Drama.....	2 or 3	48	47
Hauschild.....	5. Modern Novel.....	2 or 3	21	15
Hempl.....	6. Advanced German.....	2	16	12
Boezinger, H. Hilmer.....	7. Composition.....	2	40	36
Boezinger.....	8. Advanced Composition...	2	21	14
Cooper.....	10. Schiller.....	2	15	7
Cooper.....	11. Goethe.....	3	15	9
Cooper.....	11A. Seminary.....	2	.....	3
Rendtorff.....	13. History of Literature....	2	10	10
Hempl.....	14. Teaching Modern Lang...	2	5	6
Rendtorff.....	16. Middle High German....	2	6	3
Boezinger.....	19. Gothic.....	2	2	1
Rendtorff.....	21A. Hist. of German Civilization.....	2	6	8
Hempl, Rendtorff, Cooper...	23. Thesis Work.....	Varies	4	7
Total .....		.....	545	487

There were registered in the department 78 major students, of whom 10 were graduates and 68 undergraduates. Of the graduate students, 4 were candidates for higher degrees, and at the close of the college year the degree of Doctor of Philosophy was conferred upon Herman Hilmer, and that of Master of Arts upon Misses Florence Haig, Irene Mersereau, and Ida Stauf.

GEORGE HEMPL,
Professor of Germanic Philology.

ROMANIC LANGUAGES.

During the academic year 1911-12 the teaching staff of the department consisted of Oliver Martin Johnston and Colbert Searles, associate professors; Clifford Gilmore Allen, Albert Léon Guérard, and Aurelio Macedonio Espinosa, assistant professors; Robert Edouard Pellissier, instructor.

The following is a list of the courses given during the year, with the attendance in each:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Allen, Pellissier..	1A. Elementary French.....	3	84	76
Pellissier.....	1B. Elementary French, Reading Course.....	3	24	23
Searles, Pellissier	2. Second Year French, Com- position.....	2	36	28
Guérard, Pellis- sier.....	3. Modern French Reading..	2	85	79
Guérard.....	4A. French Conversation.....	1	20	19
Searles.....	4B. French Pronunciation....	1	6	12
Guérard.....	5. Reading and Writing of French.....	3	19	21
Guérard.....	6. Advanced French Prose Composition.....	2	5	7
Searles.....	7. Outline Course in the His- tory of French Literature	3	12	12
Searles.....	8. Classical French.....	3	19	13
Searles.....	9. History of French Litera- ture in the Nineteenth Century.....	2	5	6
Guérard.....	10. Voltaire.....	2	6	.....
Guérard.....	11. Victor Hugo.....	2	.....	5
Pellissier.....	11A. French Novel.....	2	.....	5
Allen, Espinosa, Pellissier.....	12. Elementary Spanish.....	3	120	92
Allen.....	13. Second Year Spanish Com- position.....	2	23	16
Espinosa.....	14. Modern Spanish Reading.	2	43	37
Espinosa.....	15A. Spanish Conversation...	1	18	11
Espinosa.....	15B. Spanish Pronunciation...	1	1	2
Espinosa.....	16. Advanced Spanish Com- position.....	2	8	9
Allen.....	17. Classical Spanish.....	2	15	14
Espinosa.....	18. Modern Spanish Drama...	2	11	11
Allen.....	18A. Outline Course in the His- tory of Spanish Litera- ture.....	2	6	6
Johnston.....	19. Elementary Italian.....	3	12	10
Johnston.....	21. Dante and the Divine Comedy.....	2	.....	35
Johnston.....	22. Phonetics.....	2	4	.....
Johnston.....	23. Teacher's Course in French	1	.....	5
Johnston.....	24. Corneille.....	3	6	.....
Johnston.....	25. Introduction to the Study of Old French.....	2	2	2
Searles.....	The Technique of Modern French Fiction.....	3	2	.....
Guérard.....	Esperanto.....	1	2	.....
			594	556

There were registered in the department during the year 35 major students, of whom 1 was a graduate.

OLIVER MARTIN JOHNSTON,
Associate Professor of Romanic Languages.

ENGLISH LITERATURE AND RHETORIC.

The teaching staff of the department for the year 1911-12 consisted of Alphonso Gerald Newcomer, professor; Samuel Swayze Seward, Jr., Howard Judson Hall, Lee Emerson Bassett, Henry David Gray, William Dinsmore Briggs, assistant professors; Theresa Peet Russell, Everett Wallace Smith, Edith Ronald Mirrieles, Van Wyck Brooks, instructors; Elizabeth Lee Buckingham, Paul J. Batkin, acting instructors. Mrs. Evelyn Wight Allan, Dean of Women, conducted one course in Shakespeare.

The number of major students registered in the department was 139, of whom 2 were special students and 23 graduates. Twenty-five were given the degree of A. B., and 9 the degree of A. M.

Following is a table of the courses given, with the enrollment in each. In addition to these, Dr. Briggs gave two courses in the Department of English Philology:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Mirrielees, Batkin	A. Elem. Composition.....	1	131	82
Bassett.....	1A. Speaking Voice.....	1	64	67
Bassett, Buck- ingham.....	1B. Reading Aloud.....	3	54	69
Hall, Russell, Smith, Brooks	2. Composition.....	2	206	223
Seward.....	3. Note Taking.....	1	36	32
Newcomer.....	4. Modern English.....	2	24	.....
Russell, Hall....	5. English Classics.....	2	95	93
Newcomer, Brooks.....	6. Outline Hist. Lit.....	3	36	.....
Brooks.....	7. American Literature.....	3	.....	98
Bassett.....	11. Vocal Interpretation.....	2	12	14
Russell.....	12. Adv. Composition.....	2	23	25
Smith.....	13. News Writing.....	2	39	28
Bassett, Allan..	15. Shakespeare.....	3	92	35
Russell.....	16. Eng. Bible.....	3	.....	65
Seward.....	19. E. 19th Cent. Lit.....	2	10	12
Bassett.....	21. Public Speaking.....	2	48	35
Bassett.....	23. Public Reading.....	2	8	7
Briggs.....	24. Argument.....	2	31	29
Mirrielees.....	25. Short Story Writing.....	2	21	17
Gray.....	26. Play Construction.....	2	6	6
Smith.....	27. Current Newspapers.....	3	10	8
Hall.....	32. Restoration and 18th Cent.	3	29	27
Newcomer.....	34. Wordsworth.....	2	42	.....
Newcomer.....	35. Browning.....	2	.....	48
Gray.....	38. The Modern Drama.....	3	67	32
Seward.....	42. Teachers' Course.....	2	11	7
Briggs.....	54. Spenser.....	2	.....	1
Briggs.....	53. Marlowe.....	2	9	.....
Newcomer.....	55. Shakespeare's Sonnets....	2	.....	14
Gray.....	57. Seminary: Taine.....	2	14	3
Newcomer, Briggs.....	58. Journal Club.....	1	6	8
Total.....		.....	1124	1085

ALPHONSO GERALD NEWCOMER,
Professor of English.

ENGLISH PHILOLOGY.

During the academic year 1911-12 Dr. William Dinsmore Briggs of the Department of English Literature conducted the elementary course in Anglo-Saxon.

The central work of the department was done in the advanced courses

which aimed to elevate the character of graduate work and give the future teacher an independent attitude toward the problems of English Philology and some drill in the independent working up of fresh material in the line of philological investigation. The Seminary was devoted to a detailed study of the methods of English Lexicography and in connection with it papers were prepared by several students.

The following is a list of the courses given during the year:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Briggs.....	1. Anglo-Saxon.....	3	7	.....
Flügel.....	2. Elementary Chaucer.....	2	34	.....
Flügel.....	3. Early Literature.....	3	28	.....
Flügel.....	4. Middle English.....	2	9	.....
Flügel.....	7. Middle English.....	2	.....	5
Flügel.....	8. Advanced Chaucer.....	2	.....	26
Flügel.....	9. Ballads.....	2	.....	9
Flügel.....	11. Seminary.....	2	8	8
			86	48

Journal Club (see Department of English).

EWALD FLÜGEL,
Professor of Philology.

PHILOSOPHY.

The faculty of the department for the year 1911-12 consisted of Dr. H. W. Stuart, professor, and Dr. G. H. Sabine, assistant professor. The courses given, with the numbers enrolled, were as follows:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Stuart, Sabine...	Elem. Logic.....	3	42	.....
Stuart.....	Elem. Ethics.....	3	17	.....
Sabine.....	Hist. Philosophy.....	3	9	9
Sabine.....	XIX Cent. Phil.....	3	7	.....
Sabine.....	Phil. in XIX Cent. Life.....	3	.....	10
Stuart.....	Adv. Logic.....	3	.....	29
Stuart.....	Practical Ethics.....	3	.....	17
Stuart.....	Outl. Gen. Philos.....	2	11	9
Stuart, Sabine...	Seminary.....	.....	2	1
			88	75

During the second semester, courses in the philosophy of India and in Sanskrit were given by Mr. Har Dayal under the general auspices of the department.

HENRY W. STUART,
Professor of Philosophy.

PSYCHOLOGY.

The work in the department during the year was carried on by Frank Angell and Lillian Jane Martin, professors. The attendance in the several courses was as follows:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Angell.....	1. Gen. Psychology.....	4	164	.....
Martin, Angell...	2. Begin. Laboratory.....	3	18	20
Angell, Martin...	3. Recognition.....	2	3	3
Angell, Martin...	4. Adv. Laboratory.....	3	2	3
Martin.....	5. Applied Psychology.....	2	16	.....
Martin.....	6. Applied Psychology.....	2	39	.....
Angell, Martin...	7. Current Psych. Literature..	1	2	2
Angell, Martin...	9. Research Work.....	.....	2	2
			246	30

The small number of courses offered during the second semester was in part due to the absence of Professor Martin, who was pursuing an investigation in Germany on the projection of visual images.

In taking up the work of Psychological Research so generously endowed by Mr. Thomas Welton Stanford, the department is guided by the principle that the investigations, to be sound and scientific, must proceed from the simpler to the more complex phenomena. That is to say, before entering on the investigation of phenomena with extra-natural and often religious implications, it is necessary to enter thoroughly into questions of automatic action, mind-reading and telepathy, and also to work up the calculus of what may be termed inductive or practical probability. It would also be a source of great anthropological interest if a thorough study could be made of the magical rites and customs of the Australians. The collection of a small museum of instruments used for mystic rites and magical ceremonial has also been projected. The appointment of Dr. J. E. Coover to the Thomas Welton Stanford Fellowship ensures the services of a well-trained, careful and patient investigator in the field, and the friendly co-operation and laboratory facilities of the department will stand quite as much at his disposal as the income from Mr. Stanford's generous bequest. I have been in receipt of letters from several eminent

psychologists, congratulating the department on its opportunities for doing useful work in psychical research and suggesting in addition several paths of investigation.

FRANK ANGELL,
Professor of Psychology.

EDUCATION.

The members of the department for 1911-12 were Ellwood P. Cubberley, professor; Percy E. Davidson and Rufus C. Bentley, associate professors; Lewis M. Terman, assistant professor; Jesse B. Sears, instructor; George A. Clark, lecturer.

The following is the record of attendance in the several courses offered by the department during the year:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Cubberley	1. Public Education in America	2	155	.....
Davidson	2. Introd. Educational Theory	2	.....	66
Sears	3. History of Education in Europe	3	18	13
Davidson	7. Social and Moral Education	2	20	12
Davidson	8. Logic of Education	2	16	12
Cubberley	10. State School Administration	2	15	16
Terman	11. Physical Aspect of the Child	3	20	.....
Terman	12. Educational Hygiene	3	.....	46
Bentley	13. Secondary Education	3	.....	63
Terman	14. Adolescence	2	17	.....
Bentley	15. Administration of a School	2	.....	8
Bentley	16. Types of Secondary Schools	2	.....	8
Sears	17. Method and Mgmt. of Instruction	1	14	22
Sears	18. Practice Teaching	4	22	12
Clark	19. Commercial Trs. Training Course	3	46	41
Cubberley	22. Statistical Method	2	.....	4
Terman	24. Clinical Child Psychology	2	.....	10
Terman	25. Experimental Pedagogy	2	11	11
Davidson	26. The Curriculum	2-5	12	6
Cubberley	28. Foreign School Systems	2	5	6
Bentley	33. Thesis Work	1	3	.....
Sears	33. Thesis Work	1	.....	2
Terman	34. Special Courses	1-3	3	.....
Davidson	34. Special Courses	2-4	3	.....
Cubberley	35. Seminary	2	3	2
			383	360

I would like to call particular attention to the course of lectures given by Mr. G. A. Clark on commercial teaching. This course proved of great value to our students. One of the most important means of expanding the work of training teachers here would be the addition of a number of such courses with a view to preparing our graduates better for the work of public education.

ELLWOOD PATTERSON CUBBERLEY,
Professor of Education.

HISTORY.

The faculty for the department for the year 1911-12 consisted of Professors Ephraim Douglas Adams and Arley Barthlow Show; Associate Professors Edward Benjamin Krehbiel and Payson Jackson Treat; Assistant Professors Henry Lewin Cannon and Edgar Eugene Robinson; and Instructor Percy Alvin Martin.

President Jordan and Mr. Krehbiel spent a portion of the summer in the southern states, investigating certain effects of the Civil War. Their course in International Conciliation is continued as a part of the work offered by the Department of History.

The number of major students registered in the department for the year was 188, of whom 169 were undergraduates, 16 graduates and 3 specials.

The Master of Arts degree was conferred in May, 1912, upon 5 students

Linda May Bell—Thesis: Some British Magazines on America from 1815 to 1846.

Roy Francis Howes—Thesis: Charles Elliot as British Chargé to the Republic of Texas, 1842-1846.

Mabel Deborah Pratt—Thesis: William Kennedy and his Activities in Texas.

Marjory Seeley—Thesis: The Purpose of the Interdict, with Especial Reference to the Period 1216-1272.

Francis Packard Young—Thesis: John C. Calhoun as Secretary of War, 1817-1824.

The following is a list of courses given in 1911-12, with hours of credit and attendance for each semester:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Martin.....	1. Training.....	1	38	33
Show.....	3A. Middle Ages.....	3	122	.....
	3B. Middle Ages.....	3	.....	131
Cannon.....	4A. English History.....	3	65	.....
	4B. English History.....	3	.....	57
Krehbiel.....	5A. European History.....	2	115	.....
	5B. European History.....	2	.....	113
Robinson.....	6A. American Colonial History.....	2	34	.....
	6B. American Colonial History.....	2	.....	31
Adams.....	7. United States History.....	2	102	102
Robinson.....	8. Westward Movement.....	3	13	25
Treat.....	9A. The Far East.....	3	87	.....
	9B. The Far East.....	3	.....	123
Martin.....	10. Spain and Spanish America.....	2	28	40
Cannon.....	11. English Constitutional.....	2	37	.....
	11B. English Constitutional.....	Various	.....	34
Martin.....	12. History of Germany.....	3	30	31
Show.....	13A. The Ancient Church.....	2	4	.....
	13B. The Mediaeval Church.....	2	.....	5
Krehbiel.....	15A. Europe in the Nineteenth Century.....	3	23	.....
Show.....	16. Teacher's Course.....	2	25	22
Cannon.....	17. Periodical Literature.....	1	12	14
Adams.....	18A. Eng. and Am. in Civil War 1860.....	3	9	.....
	18B. Eng. and Amer., 1815 to 1860.....	3	.....	9
Jordan, Krehbiel	20. International Conciliation.....	3	.....	88
Treat.....	21. Tropical Colonization.....	2	22	.....
Treat.....	22. History of Australasia.....	2	.....	32
Show.....	27. Mediaeval Institutions.....	2	.....	2
Robinson.....	28. Seminary in Westward Movement.....	2	5	5
Cannon.....	29. Seminary in English History.....	2	14	12
Martin.....	30. The Renaissance in Italy.....	2	4	4
Adams.....	31. American Diplomatic History.....	2	9	9
Krehbiel.....	32. Seminary in Modern European History.....	2	20	20
Treat.....	36. American Diplomacy in the Far East.....	2	6	6
	Thesis.....	Various	5	4
			829	952

EPHRAIM DOUGLAS ADAMS,
Professor of History.

ECONOMICS.

The work of the department for the year 1911-12 was carried on by Professors Alvin S. Johnson, Burt Estes Howard, Albert Conser Whitaker, Associate Professor Harry Alvin Millis; Instructor Ira Brown Cross; and Acting Instructors Donald F. Grass and M. Lippitt Larkin.

The courses given and the attendance were as follows:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Johnson.....	1. Elements of Economics....	3	290	228
Larkin.....	2. Market Organization.....	3	.....	47
Grass.....	3. Accounting.....	3	.....	50
Whitaker.....	4. Money and Banking.....	3	40	.....
Johnson.....	5. Railway Problems.....	3	.....	62
Whitaker.....	6. Corporations and Trusts...	2	53	.....
Johnson.....	7. Commercial Policy.....	3	46	.....
Millis.....	8. Public Finance.....	3	16	.....
Millis.....	9. Financial History of the U. S.....	2	16	.....
Millis.....	10. The Labor Problem.....	3	50	.....
Millis.....	10A. Labor Legislation.....	3	.....	22
Millis.....	11. Immigration.....	2	.....	31
Cross.....	12. Charities.....	3	84	.....
Cross.....	12A. Corrections.....	3	.....	56
Cross.....	13. Socialism.....	3	.....	56
Cross.....	14. Economic History of Eng- land.....	3	20	.....
Millis.....	15. American Methods of Tax- ation.....	3	.....	12
Johnson.....	16. History of Political Econ- omy.....	2	18	13
Whitaker.....	17. Value and Income.....	2	5	.....
POLITICAL SCIENCE				
Howard.....	30. Comparative Federal Gov- ernment.....	3	10	6
Howard.....	31. American Politics.....	3	39	.....
Howard.....	32. Municipal Government....	3	.....	79
Howard.....	34. Seminary in Political Sci- ences.....	2	14	.....
Howard.....	Special Work.....	.....	1	3
Total.....		.....	702	665

During the second semester Professor Whitaker was absent on leave, giving courses in the University of Chicago. At the close of the year Professor Whitaker was granted leave of absence for the year 1912-13, to continue his work at the University of Chicago. Professor Alvin S.

Johnson resigned his position at Stanford to become Professor of Economics at Cornell University. Professor Murray Shipley Wildman, of Northwestern University, was appointed Professor of Economics at Stanford, and executive head of the department for the year 1912-13.

ALVIN SAUNDERS JOHNSON,
Professor of Economics.

LAW.

The faculty of law for the year 1911-12 consisted of Professors Frederic Campbell Woodward, Arthur Martin Cathcart and Charles Andrews Huston, Acting Professor Howard L. Smith, and Associate Professor Joseph Walter Bingham. Professors Charles Henry Huberich and Wesley Newcomb Hohfeld were absent on sabbatical leave. The course in California Practice was given by Samuel Watson Charles, Esq., of Palo Alto.

The courses of instruction given and the enrollment in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Huston.....	1. Introduction to Law.....	2	.....	76
Smith.....	2. Criminal Law.....	3	.....	37
Smith.....	7. Conflict of Laws.....	3	46	.....
Bingham.....	11. Introduction to Property..	3-3	58	45
Bingham.....	13. Wills and Administration..	4	.....	43
Bingham.....	15. Future Interests.....	4	15	.....
Cathcart.....	18. Torts.....	3-3	47	43
Woodward.....	20. Contracts.....	3-3	57	47
Huston.....	23. Agency.....	4	.....	42
Huston.....	24. Partnership.....	3	25	.....
Huston.....	25. Private Corporations....	4	43	.....
Cathcart.....	26. Public Service Companies..	3	.....	25
Woodward.....	27. Bankruptcy.....	2	37	.....
Huston.....	28. Insurance.....	2	.....	28
Woodward.....	29. Suretyship.....	3	.....	28
Smith.....	31. Equity I.....	4	58	.....
Cathcart.....	34. Damages.....	2	.....	30
Cathcart.....	35. Pleading.....	4	31	.....
Smith.....	36. Evidence.....	4	.....	21
Charles.....	37. California Practice.....	2	.....	21
			417	486

The registration of students in the law school was 117, of whom 37 were graduate students, 51 seniors in the pre-legal course, and 29 special

students. The registration of students in the pre-legal course, excluding seniors, who are counted as students in the law school, was 173. The total registration, including both law and pre-legal students, was 290.

The total number of volumes in the law library on August 1, 1911, was 15,184. During the year, 803 volumes were added. Of these, 484 were acquired by purchase, 24 by gift and 295 by binding. The total number of bound volumes in the library on July 31, 1912, was 15,987.

FREDERIC CAMPBELL WOODWARD,
Professor of Law.

GRAPHIC ART.

The personnel of the department faculty was as follows: Arthur Bridgman Clark, associate professor; Mrs. Chloe Leslie Starks and Henry Varnum Poor, instructors.

Associate Professor Robert B. Harshe has spent the year on leave of absence in study in London and Paris. He has also acted in the capacity of collecting agent for the art interests of the Panama-Pacific Exposition.

During the year exhibitions of painting and drawings were made by Mr. Poor and Mrs. Starks, instructors, and by Mr. Ernest Nelson, a student in the department.

The courses of instruction and attendance follow:

INSTRUCTOR	COURSE	Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Starks.....	1. Elementary.....	2 to 4	29	28
Poor.....	2 & 3. Costume Figure.....	2 to 5	22	38
Poor.....	4. Color (in oil).....	2 to 4	13	18
Clark.....	5. Landscape.....	3	14	.....
Clark.....	6. Lectures on Painting.....	2	32	46
Clark.....	7. Organic Form.....	3	.....	17
Clark.....	11. Design.....	3	15	9
Clark.....	13. Handicraft.....	2	19	18
			144	174

ARTHUR BRIDGMAN CLARK,
Associate Professor of Graphic Art.

MATHEMATICS.

The instructing body was composed of Robert Edgar Allardice and Rufus Lot Green, professors; and Hans Frederik Blichfeldt, associate professor.

The program of work was as follows:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Blichfeldt	1. Trigonometry	2	30	.....
Blichfeldt	2. Solid Geometry	2	.....	24
Green	3. Algebra	5	67	.....
Green	4. Coordinate Geometry	5	.....	15
Allardice	6. Plane Geometry	2	15	12
Blichfeldt	7. General Course	3	14	13
Allardice	9. Calculus	3	15	13
Green	10. Advanced Coord. Geometry	2	12	11
Allardice	11. Advanced Calculus	3	4	.....
Allardice	12. Theory of Functions	3	.....	6
Blichfeldt	13. Non-Euclidean Geometry	2	.....	2
Blichfeldt	15. Diff. Equations	3	5	5
Green	18. Theory of Equations	3	5	3
Blichfeldt, Allardice	19. Reading Course	2	4	3
Allardice	21. Projective Geometry	2	2	1
Green	Fundamental Principles	3	2	2
			175	110

RUFUS LOT GREEN,
Professor of Mathematics.

APPLIED MATHEMATICS.

The instructing force of the department during the year 1911-12 was constituted as follows:

Professor L. M. Hoskins, Associate Professors H. C. Moreno and S. D. Townley, Assistant Professors W. A. Manning and E. W. Ponzer.

The courses of instruction given, with the enrollment in each, are shown in the following table:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Manning	A. Solid Geometry	2	20	.....
Manning	B. Trigonometry	2	.....	34
Moreno, Manning, Ponzer	1. First Year Mathematics . .	5	114	108
Manning, Ponzer, Townley	2. Calculus	3	99	93
Moreno, Townley, Hoskins	3. Theoretical Mechanics . . .	5	99	96
Townley	5. General Astronomy	3	19	.....
Townley	5A. Practical Astronomy	3	.....	14
Townley	5B. Advanced Practical Astronomy	1	.....	1
Moreno	6. Graduate Course	4	1	1
Hoskins	†3A. Hydraulics	3	.....	77
Hoskins	†3B. Hydraulic Motors	3	13	.....
			365	424

†Scheduled under Engineering.

LEANDER MILLER HOSKINS,
Professor of Applied Mathematics.

CHEMISTRY.

The teaching staff in the Department of Chemistry for the year 1911-12 consisted of Professors John Maxson Stillman, Lionel Remond Lenox, Stewart Woodford Young, Robert Eckles Swain, Assistant Professor John Pearce Mitchell, Instructors William Henry Sloan, George Shambaugh Bohart, Harry Johnson Sears, Acting Instructor Alice Ruth Berger.

Professor Edward Curtis Franklin was absent on leave while occupying the position of Professor of Chemistry in the Hygienic Laboratory of the Bureau of Public Health and Marine Hospital Service at Washington, D. C. He is also granted sabbatical leave for the year 1912-13.

Attendance in various courses, Department of Chemistry, 1911-12:

LECTURE COURSES.

INSTRUCTOR	COURSE	UNITS		ATTENDANCE	
		1st Sem.	2nd Sem.	1st Sem.	2nd Sem.
Mitchell....	*1. General Inorganic....	2	2	151	124
Mitchell....	*1. General Inorganic....	3	2	52	47
Stillman....	*2. Principles.....	3	3	31	24
Swain.....	*3. Organic.....	2	2	28	23
Swain.....	†3A. Organic (Medical)....	.....	3	.....	26
Stillman....	*4. Industrial.....	2	2	21	20
Stillman....	†5. History of Chemistry..	2	.....	5	.....
Lenox.....	†6. Qualitative Analysis..	1	1	32	51
Young.....	*8. Physical Chemistry...	3	3	17	14
Young.....	†10. Applied Physical Chem.....	.....	2	.....	12
Swain.....	†11. Physiological Chem...	3	.....	16	.....
Stillman, Swain.....	*12. Seminary.....	1	1	15	14
				368	355

* Courses continuing through the year.

† Courses completed in one semester.

LABORATORY COURSES.

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Mitchell, Sears and assistants..	1A. General Inorganic.....	2	47	.....
Fulkerson, God- dard and Hawes	2A. General Inorganic.....	2	59	65
Lenox, Berger...	B. Qualitative Analysis.....	3	32	51
Bohart.....	C. Organic Preparations....	3	8	15
Sloan.....	D. Quantitative Analysis....	3 to 4	17	18
Lenox, Sloan....	E. Mineral Analysis.....	3 to 4	3	8
Young, Jameson or Cross.....	F. Physical Chemistry Lab...	3 to 5	10	4
Swain, Horn....	G. Physiological Chem.....	3	16	.....
Lenox, Lacy....	H. Assaying.....	3	16	13
Stillman.....	Advanced, Special or Re- search.....	2	1	.....
Lenox.....	Advanced, Special or Re- search.....	2 to 4	2	2
Young.....	Advanced, Special or Re- search.....	3 to 5	4	6
Swain.....	Advanced, Special or Re- search.....	3 to 5	5	11
			220	193

All laboratory courses arranged to be completed in one semester.

Work of research carried on during the year was as follows:

Professor Young prosecuted a study of the conditions affecting the catalytic reactions involved in his method of reducing the sulphur dioxide in smelter fumes to sulphur. He also, with assistance of students, conducted certain studies of colloidal solutions, as noted below. Professor Swain, working in collaboration with Professor Peirce of the Department of Botany and Assistant Professor Mitchell of this department, completed the study of the effects of smelter smoke on vegetation carried on for the past two years under the authorization of the United States Department of Justice. During the summer 1912 he was also employed in field work for the Referee Board of the Department of Agriculture in connection with the question as to the sulphuring of dried fruits.

Assistant Professor J. P. Mitchell collaborated with Professor Swain and Professor Peirce in the above mentioned study of the effect of smelter smoke upon vegetation, and was also during the present summer employed in the study of the amount, character and distribution of the cement dustfall in the neighborhood of Colton, Cal., with reference to the local influence of cement dust upon vegetation. He also continued the collection of data concerning the normal constituents of the underground waters of this peninsula.

Mr. Geo. S. Bohart, instructor in Chemistry, completed the study of some reactions of Cadmium, Nickel and Chromium salts in liquid ammonia and presented the subject in his thesis toward his master's degree. Mr. Bohart was also associated with Professor Mitchell in the study of cement dust above mentioned. Instructor H. J. Sears and Assistant Eloise Jameson, under direction of Professor Young and Professor Zinsser of the Division of Bacteriology, studied the cataphoresis and agglutination of bacteria and serum proteins. The results of their study were presented as the thesis for the master's degree.

Mr. Charles M. Fulkerson, under direction of Professor Swain, studied the influence of ether anesthesia and alcohol narcosis on the production of glycosuria, in partial fulfillment of requirements for the master's degree. Mr. J. S. Horn studied nitrogen metabolism in a case of chronic uranium poisoning. The work constituted his master's thesis under the direction of Professor Swain.

Miss Helen May Nagel studied under direction of Professor Swain the occurrence of Allantoin in plant tissues. The results constituted her thesis for the master's degree. Mr. Ralph C. Pollock, under direction of Professor Young, made a study of the influence of electrolytes on the cataphoresis of colloidal arsenious sulphide, and presented the results as his thesis for the master's degree.

JOHN MAXSON STILLMAN,
Professor of Chemistry.

PHYSICS.

The teaching faculty of the Physics Department for the year 1911-12 consisted of Professor Fernando Sanford, Associate Professor Frederick J. Rogers, Assistant Professors Elmer R. Drew and Joseph G. Brown, Instructor Perley A. Ross. The total registration of major students was 15, of whom 6 were graduates and 9 were undergraduates. Two bachelor's and 2 master's degrees were given in the department.

The courses of study, with the enrollment in each for the year, are given in the following table:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Ross, Burbridge.	1. Dynamics.....	5 & 3	36	9
Drew, Richard-son.....	2. Elec. & Mag.....	4	11	.....
Ross, Hyatt....	3. Heat.....	3	.....	11
Brown, Hyatt...	4. Sound.....	3	6	.....
Brown, Richard-son.....	5. El. Optics.....	3	.....	8
Brown, Hyatt...	6A. Eng. Physics.....	5	33	.....
Rogers, Bur-bridge.....	6B. Eng. Physics.....	6	.....	36
Drew, Burbridge and Moffitt....	7. Phys. for Med.....	4	17	18
Rogers, Moffitt..	9. Elec. Meas.....	6	26	.....
Sanford.....	10. Adv. Optics.....	2	.....	2
Sanford.....	11. Gen. Physics.....	5	6	6
Sanford.....	13. Teacher's Phys.....	1	3	2
Rogers.....	18. Adv. Elec.....	4	6	.....
Sanford.....	19. Investigation.....	.....	5	5
			149	97

FERNANDO SANFORD,
Professor of Physics.

BOTANY.

With the beginning of the year the two departments of botany, which had worked side by side for years, were merged into one, under the leadership of Professor Campbell. The personnel of the department was as follows: Professor Douglas Houghton Campbell, Professor George James Peirce, Associate Professor LeRoy Abrams, Assistant Professor Leonas Lancelot Burlingame, Instructor James Ira William McMurphy.

The courses, with the enrollment in each for the year, are given in the following table:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Campbell, Peirce, Abrams, Burlingame, McMurphy.....	1. Elementary.....	3 to 3½	48	45
Abrams.....	1A. Field.....	1	.....	16
Campbell.....	2. Algae.....	5	9	.....
McMurphy.....	3. Fungi.....	4	7	.....
Campbell.....	4. Archegoniatae.....	5	.....	12
Burlingame.....	5. Gymnosperms.....	3	.....	3
Abrams.....	6. Angiosperms.....	3	.....	2
Peirce.....	7. Physiology.....	1	26	.....
Peirce.....	8. Physiology.....	3	3	.....
Peirce.....	9. Physiology.....	3	.....	8
Burlingame.....	10. Anatomy.....	3	9	.....
Abrams.....	11. Geographical.....	3	6	.....
Campbell.....	13. Archegoniatae.....	3 to 6	4	4
Peirce.....	16. Physiology.....	3 to 6	1	.....
			113	90

Professor Campbell, away on leave of absence for the current year, has been occupied with the material which he has collected on his various expeditions to tropical and sub-tropical countries, and has published a number of shorter papers. Two books, "Plant Life and Evolution" and "The Comparative Morphology of the Eusporangiatae," have appeared during the year.

Professor Peirce has continued his experimental work, with Professors Swain and Mitchell of the Department of Chemistry, on the effects of smelter fumes on vegetation. A report of this work—chemical, physiological and anatomical, supplementing observations in the field—will be made this year. Other experimental work has been conducted on Respiration and on the formative influence of light.

Associate Professor Abrams has continued his studies of the flora of southern California. He has made collections and studies of the Coniferae growing on the University grounds.

Assistant Professor Burlingame has in the press papers embodying the results of his minute morphological studies of the Araucariae. These peculiar trees, fruiting abundantly in some of the residence grounds in this neighborhood, have long attracted the interest of botanists.

Miss Hallie D. M. Jolivet, assistant, finished her studies of the reactions of certain fungi to light stimuli, and passed the examination for the degree of Doctor of Philosophy.

Five advanced students have carried on various pieces of work in the

lines represented by the members of the Department, but these studies are not yet ready for publication.

Soon after the beginning of the year a service in memory of the late Professor Dudley was held in the College Chapel and later in the year students and alumni who had been students of Professor Dudley met to acknowledge their obligations to him. Two alumni and the colleagues of Professor Dudley have united in preparing a volume in his honor. This volume will also contain two of Professor Dudley's own unpublished papers, and will appear as one of the series of university publications.

The report of the Curator of the Dudley Herbarium is appended.

GEORGE JAMES PEIRCE,
Professor of Plant Physiology.

THE DUDLEY HERBARIUM.

The general collection of mounted plants was increased by 5407 sheets. A separate collection of local plants has been mounted to meet the needs of students working on the local flora. Several large acquisitions were made to the Herbarium during the year. Notable among these were 800 specimens from the National Herbarium and 1000 specimens from the University of California, both of which were acquired through exchange. The Curator of the Herbarium spent six weeks of the summer vacation collecting in the Sierra Nevada and brought back approximately 3000 specimens.

LEROY ABRAMS,
Curator of the Dudley Herbarium.

PHYSIOLOGY AND HISTOLOGY.

The teaching force and laboratory assistants in the department were as follows: Oliver P. Jenkins and Frank M. McFarland, professors; Clara S. Stoltenberg, associate professor; J. Rollin Slonaker, assistant professor; Frank W. Weymouth, instructor.

Professor McFarland continued his work upon various Nudibranchs during the year. During the summer of 1912 he was in charge of the summer session of the Marine Biological Laboratory of the University at Pacific Grove.

Associate Professor Stoltenberg has continued her investigations on the nerve tracts in the brain and spinal cord of rodents.

Assistant Professor Slonaker and Karl Schaupp have been studying the effects of a strictly vegetable diet on the fecundity of the white rat, the character, number and rate of growth of the young through several successive generations. In conjunction with Dr. Casey A. Wood of Chi-

cago, Dr. Slonaker has also been making a detailed study of the visual apparatus in birds.

Instructor Weymouth has during the year published a paper on Observations on the Habits of the Crustacean *Emerita analoga*, Smithsonian Miscellaneous Collections, vol. 59, No. 7. He has also been engaged in investigations of the life history of the edible crab, *Cancer magister*.

Research work was carried on by Mr. H. F. West and Miss Elsa Will, students in the department, on the development of the tissues of the larval Salamander in vitro.

In the following table of statistics the numbers by which the courses are designated are those used in the register for 1911-12, to which reference may be made for more detailed explanation of the character of the courses.

INSTRUCTOR	COURSE	Unit Hours	HOURS PER WEEK		ATTENDANCE	
			Lec.	Lab.	1st Sem.	2nd Sem.
Jenkins, Slonaker, Weymouth, Schaupp...	1. General Anatomy and Physiology...	3	1	5	79	70
Jenkins, Slonaker, Schaupp...	2. Physiology of Mus- cle, Blood and Cir- culation.....	3	1	5	38	.. ..
Jenkins, Slonaker, Schaupp...	3. Phys. of Digestion, Respiration, etc..	3	1	5	.....	33
Stoltenberg.	4. The Structure of the Sense Organs....	3	1	5	25	.....
Stoltenberg.	5. The Structure of the Nervous System..	3	1	6	.....	26
Jenkins, Weymouth.	6. Physiology of the Nervous System..	3	1	5	17	.....
Jenkins....	8. Special Courses in Physiology.....	.....	2	.....	2	6
McFarland..	9. Histology.....	3	1	6	36	34
McFarland..	13. Special Courses in Histology	2-4	.....	6-12	6	6
Jenkins, McFarland.	14. Journal Club.....	1	1	.....	23	18
McFarland..	15. Research in Histo- logy.....	2-3	.....	6-9	.....	2
					226	195

OLIVER PEEBLES JENKINS,
Professor of Physiology.

PHYSICAL TRAINING AND PERSONAL HYGIENE.

ENCINA GYMNASIUM.

The gymnasium staff for the year was composed of Assistant Professor Royce Reed Long and Instructor Harry Wilfred Maloney.

The following table gives the statistics for 1911-12:

INSTRUCTOR	COURSE	Hours per Week	Unit Hours	ATTENDANCE	
				1st Sem.	2nd Sem.
Long, Maloney, and assist- ants..... Long.....	1. Physical Training....	3 Gym.	1	344	300
	2. Physical Training Methods.....	3 to 6 Lab. & Gym.	1 or 2	7	7
				351	307

Of the above number 301 the first semester and 266 the second semester were enrolled for credit. Thirty-four the first semester and 43 the second semester enrolled for work without credit and paid the regular gymnasium fee.

The gymnasium was used approximately 28,869 times, and 18,573 baths were taken during the year. Through the cooperation of Dr. R. L. Wilbur of the Department of Medicine, all of the men taking gymnastic work and all participating in competitive athletic games were given a medical examination by members of the medical department staff. Three hundred and fifty-three "first" examinations during the fall semester, and one hundred and eighty-three in the second semester, were made. In addition there were 156 subsequent examinations of men having physical defects of various kinds. Six men were kept out of competitive sports; fifty-six were kept under observation for periods varying from a week to the entire year; and special exercise was prescribed in about one-half this number of cases.

The gymnasium is an important factor in the health conservation of the students who take advantage of the opportunity for exercise afforded them. It is also a factor in promoting a wholesome democracy among them. Here all mingle on an equal footing under conditions most favorable for normal acquaintanceship.

ROYCE REED LONG,
Assistant Professor and Director of Physical Training.

PHYSICAL TRAINING AND PERSONAL HYGIENE.

ROBLE GYMNASIUM.

The teaching in Roble Gymnasium has been carried on by Clelia Duel Mosher, assistant professor, director of the gymnasium; Henry Wilfred Maloney, instructor in fencing; Maud Cleveland, assistant; Edna Grace Davis and Maude L'Anphere Crook, student assistants.

All the teaching in Hygiene has been given by the Director of Roble Gymnasium. This has been arranged as follows:

1. A hygiene conference with such physical examination as has seemed advisable has been given every woman entering the University as a new student, and all women returning after an absence of one or more semesters. This conference takes the place of the entrance physical examination usually given in most colleges by seven or eight examiners.

2. A conference with every woman enrolled in Physical Training work has been held once or twice a month, thus insuring a close supervision of the effect of the work on the individual student.

3. Informal talks on Hygiene, Eugenics and kindred topics have been given to small groups of women who are not taking active exercise at the time. Selected readings on similar topics have taken the place of these talks when other duties have occupied the time of the Director. These classes have been held from 15 to 20 times per week for both semesters.

4. In the second semester two lectures per week in Personal Hygiene have been given. This course is open to all registered women.

5. An office hour open to any woman in the University has been held five days in the week in the office of the Public Health Committee in the Inner Quadrangle.

The following table gives the statistics of these subjects:

INSTRUCTOR	COURSE	Hours per Week	Unit Hours	ATTENDANCE	
				1st Sem.	2nd Sem.
Mosher, Maloney, Cleveland, Davis, Crook.	Physical Training and Personal Hygiene ...	3	1	156	235
Mosher. ....				.....	13
	Personal Hygiene.	2	1	.....	13
	METHODS:				
Davis.	A. Practice Teaching.	2	1-2	6	5
Crook.	B. Applied Anatomy.	3	2	5	.....
Cleveland. ...	C. Playground Administra- tion.	1	1	9	.....
				176	253

The enrollment in the gymnasium for the past three years has been as follows:

	First Semester	Second Semester
1909-10.....	80	70
1910-11.....	116	175
1911-12.....	176	253

The congestion in the dressing and shower rooms was partially relieved by the addition of five showers and ten dressing rooms. The space for this much needed improvement was made available by transferring the examining room to the third floor, formerly a store room.

A study of the swimming pools of seven eastern institutions was made by the Director during the spring of last year. A plan has been outlined for an ideal swimming pool for the Stanford women.

The work of the Medical Adviser to Women has been intimately associated with the Hygiene work. In accord with the policy of the Public Health Committee, no medical treatment has been given. Conditions requiring more than the alteration of the hygiene of the individual have been referred to some practicing physician chosen by the student. The Medical Adviser has also had the administration for the Public Health Committee of the entrance vaccination requirement for the women.

CLELIA DUEL MOSHER,

Medical Adviser to Women and Director of the Women's Gymnasium.

ZOOLOGY.

The faculty of the department for the year 1911-12 was as follows: Charles Henry Gilbert, George Clinton Price and Harold Heath, professors; John Otterbein Snyder, associate professor; Edwin Chapin Starks and Walter Kenrick Fisher, assistant professors.

Professor Gilbert continued his investigations on the life history of the Pacific Salmon and on the bathybial and pelagic fishes of Bering Sea and Japan.

Professor Heath continued his work on a monographic report of the Solenogastres of the Western Atlantic Ocean. In collaboration with Mr. E. A. McGregor a report was prepared on the polyclads of Monterey Bay. Under his supervision special studies were carried on by W. F. Thompson on The Development of a Chiton, *Trachydermon raymondi*; by J. H. Paine on the genus *Ancylus*; by Josephine Randall on The Innervation of the Crustacean Heart.

Assistant Professor Fisher continued the preparation and illustration

of a report on an extensive collection of Philippine and East Indian starfishes, collected by the United States Fisheries steamer "Albatross," 1907-10, and prepared a preliminary paper covering new forms in this collection. With C. H. Richardson, a student in the department, he began the study of a collection of serpent stars collected off California and Alaska by the steamer "Albatross" in 1903 and 1904.

Associate Professor Snyder was engaged during the year in a study of the fishes of the streams and lakes that were at one time connected with the quaternary Lake Lahontan, in Nevada. Through the interest of the United States Bureau of Fisheries, three expeditions were made to the field and a large number of specimens collected.

Assistant Professor E. C. Starks spent the summer of 1911 on the Stanford Expedition to Brazil and the following year in preparing a report on the fishes taken by the expedition.

The courses of instruction offered, with attendance, were as follows:

INSTRUCTOR	COURSE	HOURS		ATTENDANCE	
		Lec.	Lab.	1st Sem.	2nd Sem.
Price, Starks.....	1. Elementary Zoology....	1	6	36	30
Fisher.....	2. Elementary Zoology—spec.....		6	10	9
Heath.....	3. Invertebrate Anatomy....	1	6	10	10
Heath.....	4. Invertebrate Embryology.....		6		5
Heath.....	5. Invertebrates (Adv.)....		6-9	3	2
Heath.....	6. Microscopical Anatomy....		6	1	
Fisher.....	8. Invertebrates (Spec. Syst.).....		6-9		1
Snyder.....	9. Vertebrates (Class.)....		6	12	13
Snyder.....	10. Comp. Anat. Vertebrates.....		9	4	1
Price.....	11. Vertebrate Embryology....	1	5	17	6
Starks.....	12. Ichthyology.....		6-9	6	5
Gilbert.....	13. Ichthyology (Adv.)....		12		1
Gilbert.....	14. Journal Club.....	2		9	10
Snyder.....	15. Vertebrates (Adv.)....			3	4
				111	97

CHARLES HENRY GILBERT,
Professor of Zoology.

ENTOMOLOGY AND BIONOMICS.

The faculty of the department in 1911-12 was composed of Vernon Lyman Kellogg, professor (absent on leave during second semester);

Mary Isabel McCracken, assistant professor; Rennie Wilbur Doane, assistant professor and curator. David Starr Jordan gave lectures on Organic Evolution.

The number of major students was 18, of whom 5 were graduate students. Courses given were as follows, with attendance as indicated:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
McCracken.....	1. Elementary Ent.....	3	18	28
McCracken.....	1A. Morphol. and Phys. of Insects.....	3	5	8
McCracken.....	2. Classif. and Devel. of Insects.....	4	1	4
McCracken.....	Adv. Lab.....	4-5	1	1
Doane.....	3. Econ. Ent. Forest Insects..	2	2	.....
Doane.....	3A. Econ. Ent. Orchard and Garden Insects.....	2-3	.....	7
Doane.....	4. Econ. Ent. Coccidae.....	2-3	5	.....
Doane.....	5. Insects and Disease.....	1-2	9	.....
Doane.....	7. Econ. Ent. Adv. Lab. and Field.....	3	.....	9
Kellogg.....	Adv. Lab.....	3-5	5	.....
Kellogg.....	Grad. Thesis Work.....	3-4	3	.....
Jordan, Kellogg and McCracken.	8. Organic Evolution.....	2	.....	171
			49	228

Investigations were carried on during the year by Professor Kellogg on distribution and species-forming of ectoparasites; by Assistant Professor McCracken, on heredity in silk-worms (8th year); and by Assistant Professor Doane on the classification of the Tipulidae, and on certain injurious insects of forest and foliage trees.

The following students' investigations may also be noted: By E. H. Coleman on the poisonous effects of the venom of the "black widow" spider, *Latrodectus mactans*; by Frankie Willard, on the classification and life history of the Mycetophilidae; J. H. Paine on Mallophaga; C. E. Johnson, on the life history and morphology of the cottony cushion scale, *Icerya purchasi*; D. L. Crawford, on the habits and anatomy of the petroleum fly, *Psilopa petrolei*, and on the classification of the Delphacidae.

All the recent male graduates of the department have received appointments as professional entomologists. These appointments have carried their recipients to Japan, Peru, the Hawaiian Islands, Porto Rico, and various parts of the United States.

VERNON LYMAN KELLOGG,
Professor of Entomology.

GEOLOGY AND MINING.

The department faculty for the year 1911-12 consisted of Professors J. C. Branner, J. P. Smith; Associate Professors N. F. Drake, A. F. Rogers, D. M. Folsom, G. H. Clevenger; Instructor H. W. Young, Acting Instructor E. C. Templeton and Curator in Geology C. H. Beal.

The following additions to the equipment of the department were made during the year:

Geology.—Three sets of book shelves for the geological library and one set of shelves built into room 332.

Paleontology.—The teaching collection has been enlarged by the purchase of sets of invertebrate fossils from Ward of Rochester, and by the addition of a representative set of reef-building corals.

Mineralogy and Petrography.—The petrography building was remodeled. A rock-grinding apparatus and tables and lockers for microscopes were installed. Six mahogany drawer cases for rock specimens were purchased. Other additions include a two-circle goniometer for measuring crystals and a second-hand polarizing microscope.

Mining.—Additions to the mining department include a model of an ore bin made by Mr. T. W. Thompson.

Metallurgy.—A number of minor changes and improvements were made in the metallurgical laboratory during the year.

Mr. Branner returned to the University in August and has been engaged in the preparation of reports upon the results of his work in Brazil. He has published during the year several papers relating to the geology and geography of Brazil, and has in preparation a new and larger edition of his Portuguese text book of elementary geology for Brazilian students.

During the year Mr. Branner has bought and added to the library in the department of geology the special library of Professor S. F. Peckham relating to petroleum and bitumen.

During the summer of 1911 Mr. J. P. Smith was engaged in investigations for the United States Geological Survey in the Mesozoic stratigraphy of northern California, Nevada and Oregon, assisted by Mr. H. S. Coe. These investigations were continued during June, 1912, with the assistance of Mr. C. H. Davis. Part of the results of these investigations have been published by Mr. Smith in the *Journal of Geology*, *American Journal of Science*, *Popular Science Monthly*, and *Proceedings of the California Academy of Science*.

Mr. Drake has been invited by the International Congress of Geologists to prepare for the next meeting a paper upon the coal deposits of China, and he has spent such time as his University duties permitted in its preparation. He has also prepared and published in the *Bulletin of the Seismological Society of America* a valuable article on destructive earthquakes in China, covering a period of four thousand years. Mr.

Drake resigned at the end of the year to accept the position of State Geologist of Arkansas and Head Professor of Geology in the University of Arkansas.

Mr. Rogers collected minerals in Lyon County, Nevada, and in El Dorado and San Benito counties, California. Mr. Rogers' "Introduction to the Study of Minerals," a combined text-book and pocket manual, published by the McGraw-Hill Company in May, 1912, has been favorably received and will be used as a text-book at a number of universities.

Mr. G. H. Clevenger has completed the work, undertaken in connection with another well known metallurgist, for the development of a hydro-metallurgical process for the recovery of silver from the high grade silver ores of the Cobalt district of Ontario, Canada. The technical and commercial success of this work is shown by the production of several million ounces of silver by the process to date. Recently the precipitation of gold, silver and copper from cyanide solutions has been investigated, and during the summer field work has been done in Nevada, Colorado and South Dakota. Last fall the Lake Superior mining district and the Omaha plant of the American Smelting and Refining Company at Omaha, Nebraska, were visited.

Mr. H. W. Young, during the summer, has visited the metallurgical centers of Washington and British Columbia, and has made a collection of metallurgical specimens which will be available for university work. With Mr. Clevenger he has been investigating the behavior of the silver amalgam under high pressures.

Mr. T. N. Turner, with Mr. Clevenger, has calculated a set of tables for use in connection with slime treatment by the cyanide process.

The following table shows the courses given in the department during the year, and the attendance of students:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
GEOLOGY				
Branner.....	1. Elementary Geology.....	3	223	.....
Branner.....	1A. Physiography.....	1	.....	65
Branner.....	2. Economic Geology.....	2	.....	80
Drake, Temple- ton, Packard...	3. Topographical Geology...	4	.....	27
	4. Field Geology.....	5	.....	25
Rogers, Boundey.....	5. Mineralogy.....	3	23	25
Rogers.....	6. Petrography.....	2	20	18
Smith.....	7. Elementary Paleontology	4	12	23
Smith.....	8. Research in Systematic Paleontology and stra- tigraphy.....	2-5	5	7
Rogers.....	9A. Crystal Morphology.....	2	.....	2
Rogers.....	9C. Chemical Mineralogy....	3	2	1
Rogers.....	9D. Paragenesis of Minerals...	2	5	.....
Rogers.....	9X. Technique.....	2	1	.....
Smith.....	10A. Geologic History of the Great Basin.....	2	2	.....
Smith.....	10B. Geologic History of Cal...	2	.....	11
Drake.....	11. Special Courses.....	1-3	1	3
MINING AND METALLURGY				
Folsom.....	1. Mining Methods.....	5	20	.....
Folsom, Clevenger.....	2. Ore Dressing.....	2	.....	22
Folsom.....	4. Mine Machinery.....	3	.....	21
Folsom.....	5. Advanced Ore Dressing....	2	8	.....
Folsom.....	6. Mine Engineering and Mine Costs.....	2	.....	6
Folsom, Templeton.....	7. Thesis.....	2-5	9	4
Clevenger, Young.....	8. General Metallurgy.....	4	.....	28
Clevenger.....	9. Metallurgy of Constructive Materials.....	2	50	.....
Clevenger.....	10. Metallurgy of Gold and Silver.....	2	27	.....
Young.....	Metallurgy: A. General Metallurgy Laboratory..	2	.....	6
Young.....	Metallurgy: B. Metallurgy of Gold and Silver Lab- oratory.....	3-4	11	6
Clevenger.....	Metallurgy: D. Metallur- gical Research.....	2-6	.....	2
Totals.....			419	382

JOHN CASPER BRANNER,
Professor of Geology.

CIVIL ENGINEERING.

During the year 1911-12 the work of the Department of Civil Engineering has been carried out substantially as in former years. There has been an increase in the number of advanced students, candidates for the degree of Engineer necessitating the giving of special courses, as listed below, to a small number of students. This extra work, however, was carried without any increase in the teaching staff. The departments of Chemistry and Bacteriology, through Dr. Stillman and Dr. Zinsser and Assistant Professor Mitchell, have again given special short courses in Chemistry and Bacteriology suited to the needs of the students in Civil Engineering. The Department of Civil Engineering expresses its appreciation for the help given.

Below are booked the courses given during the past year:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Foss and Assistants.....	1A. Linear Drawing.....	1	92	5
Foss and Assistants.....	1B. Descriptive Geom.....	1-4	128	103
Fish and Assistants.....	4A. Elem. Surveying.....	5	68	.....
Fish and Assistants.....	4B. Elem. Surveying.....	2	51	.....
Fish and Assistants.....	6A. Railroad Surveying.....	5	.....	49
Fish and Assistants.....	6B. Railroad Location.....	2	32	.....
Fish and Assistants.....	6C. Railroad Construction...	2	.....	9
Wing and Assistants.....	2. Applied Mechanics.....	5	78	.....
Hoskins.....	3A. Hydraulics.....	3	.....	77
Hoskins.....	3B. Hydraulics.....	3	9	.....
Wing and Assistants.....	8A. Elements of Design.....	3	32	.....
Wing and Assistants.....	8B. Elements of Design.....	5	.....	30
Wing and Assistants.....	8c. Elements of Design.....	3	5	20
Wing and Assistants.....	9. Railway Bridges.....	5	29	19
Marx.....	12. Water Supply Eng.....	5	35	29
Marx.....	16. Seminary.....	1-2	2	1
Marx.....	15. Construction.....	4	1	.....
Marx.....	13. Sanitary Eng.....	5	.....	6
Marx.....	Special.....	5	1	.....
Marx.....	Special.....	2-6	.....	5
			563	353

During the year plans were worked up by Professor Wing for changing the old power house into a Mechanics of Material Laboratory and for building a small hydraulic laboratory. With the hearty co-operation of the business manager, Mr. Lathrop, it is hoped that the new laboratories will be ready by the fall of 1913.

CHARLES DAVID MARX,
Professor of Civil Engineering.

MECHANICAL ENGINEERING.

The teaching force in the department for the year 1911-12 was as follows: William Frederick Durand, Professor of Mechanical Engineering; Guido Hugo Marx, Professor of Machine Design; William Rankine Eckart, Associate Professor of Experimental Engineering; Everett Parker Lesley, Assistant Professor of Mechanical Engineering and Superintendent of Shops; Lawrence Edminster Cutter, Instructor in Drawing; Charles Norman Cross, Instructor in Experimental Engineering; Harry Harmon Blee, Instructor in Mechanical Engineering; Edward John Stanley, Instructor in Woodworking and Pattern Making; James Bennett Liggett, Instructor in Foundry; Theron James Palmateer, Instructor in Machine Shop; Robert Henry Harcourt, Instructor in Forge Shop.

During the first semester 1087 student hours of instruction were given by 11 instructors, or an average of 99 per instructor. The similar figures for the second semester are a total of 1090 student credit hours, and an average per instructor of 99.

The general policy of adding some valuable item of equipment in the shops and laboratories has been followed by the purchase of a new steam hammer for the forge, and the placing of an order for a new turbo-driven air-compressor for the laboratory.

The general work of the year was carried out in accordance with the regular program. The classes taught, and numbers in attendance, are shown in the following tabular presentation:

INSTRUCTOR	COURSE	KIND OF WORK	Unit Hours	ATTENDANCE	
				1st Sem.	2nd Sem.
Durand....	A.....	Lect. and Special.....	1	20	20
Harcourt...	1A, 1B.....	Lect. and Shop.	1-3	49	38
Liggett....	3A, 3B.....	Lect. and Shop.	1-3	39	36
Stanley....	5, 6A, 6B.....	Lect. and Shop.	1-3	70	64
Palmateer..	7A, 7B, 8.....	Lect. and Shop.	1-3	25	48
Lesley.....	9.....	Lecture.....	2	.....	5
Cutter.....	11. El. Mach. Drawing.....	Drawing.....	2 or 3	48	52
Marx GH...	13A. El. M. Design...	Lecture.....	3	.....	17
Marx GH...	13B. El. M. Design...	Drawing.....	2	.....	17
Marx GH...	14. Mach. Design...	Lect. and Draw.	4	9	8
Marx GH...	15. Mach. Design...	Lect. and Draw.	5	2	.....
Marx and Cutter.....	16. Adv. Mach. Design.....	Lect. and Draw.	3	7	2
Eckart, Cross and Blee.....	21. Calibration and Use of Engineering Apparatus.....	Lect. and Lab..	3	27	.....
Eckart, Cross and Blee.....	23. Testing of Pumping Machinery, Power Plant Auxiliaries, etc.	Lect. and Lab..	3	.....	7
Eckart, Cross and Blee.....	22. Testing of Engines and Boilers.....	Lect. and Lab..	3	22	20
Eckart, Cross and Blee.....	24. Abridged course in Experimental Eng.....	Lect. and Lab..	3	.....	23
Eckart, Cross and Blee.....	25. Adv. Course in Exp. Eng.....	Lab.....	2	1	2
Durand....	31. Heat Engines...	Lect. and Office Work.....	3	61	.....
Durand....	33. Heat Engines...	Lect. and Office Work.....	3	.....	26
Durand....	34. Thermodynamics.....	Lecture.....	1	.....	20
Durand....	35. Power Plants...	Lecture.....	2	31	.....
Durand....	36. Pumping Machinery.....	Lecture.....	2	.....	37
Durand....	37. Seminary.....	Lecture.....	1	23	11
				434	453

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

ELECTRICAL ENGINEERING.

The staff of instruction in the department was made up as follows: Assistant Professor Samuel Barclay Charters, Jr., acting executive of the department; Instructors John Andrew Koontz, Eugene Garrison McCann and Axel Nielson. Professor H. J. Ryan was absent on sabbatical leave.

The courses of instruction given by the department during the year and the corresponding attendance in such courses are given in the following table:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Charters, Koontz, Nielsen.....	A Survey.....	1	38	33
Charters, Koontz, Nielsen.....	B. Survey.....	1	23	22
Charters, Koontz, McCann.....	1. Elements.....	4	46	15
Charters.....	2A. Energy.....	1	25	.....
Nielsen.....	2A. Energy.....	4	.....	24
Koontz, McCann.	2B. Energy.....	4	.....	25
Charters.....	3A1. Practice.....	4	15	.....
Charters.....	3A1. Practice.....	2	.....	15
Charters.....	3A2. Electric Railways.....	2	.....	30
Charters.....	3A3. Transmission of Intelli- gence.....	2	.....	16
Koontz, McCann.	3B1. Electrical Machinery...	4	15	.....
Nielsen.....	3B2. Electrical Machinery...	3	15	.....
McCann.....	4. Illumination.....	1	.....	25
Charters.....	10. Advanced Work.....	7-8	2	.....
			179	205

HARRIS JOSEPH RYAN,
Professor of Electrical Engineering.

MEDICINE.

The personnel of the department faculty for the year will be found listed in the reports of the various divisions. The departments of Chemistry, Physiology and Histology, and Zoology co-operated with this department in giving courses in the first three semesters of the medical curriculum. Instruction in medicine was given to three classes, the corporation of Cooper Medical College continuing its use of the medical buildings in order to complete the work of its final year, its last class graduating in May, 1912. Those clinics necessary for the teaching of

Stanford students were turned over to the Stanford Medical faculty by Cooper Medical College. Beginning July 1, 1912, Stanford began its complete control over all of the property formerly belonging to Cooper Medical College.

The three classes in the Medical Department numbered respectively, first year, 17; second year, 10; third year, 7; with 5 special workers registered in Anatomy. With September of the year 1912 the full quota of four classes in medicine will be taught for the first time in the Stanford Medical Department. The number of students has increased more rapidly than had been anticipated when the requirements were raised from the high school diploma standard of Cooper Medical College to three years of university work. It will necessarily require some years before many medical students upon the Pacific Coast will be prepared to give as much time in preparation for medicine as is required by Stanford University. A gradual growth in the department is to be anticipated and is most desirable since the present facilities will not permit of large classes.

The principal faculty changes have been the death of Dr. Henry Gibbons, Jr., and placing on the emeritus roll of Dr. J. O. Hirschfelder.

During the year arrangements were made with the Board of Health of the City and County of San Francisco for the appointment of members of the Stanford faculty to the Stanford division at the City and County Hospital. These appointments are as follows:

Dr. Emmet Rixford, Visiting Surgeon and Chief of the Stanford Surgical Service; Dr. Leo Eloesser, Visiting Surgeon; Dr. Sol Hyman, Visiting Surgeon; Dr. Harold Hill, Visiting Surgeon and Chief of the Medical Service; Dr. W. R. P. Clark, Visiting Physician Tuberculosis Group; Dr. R. B. Tupper, Assistant in Medicine; Dr. Wm. Ophüls, Chief, Pathology; Dr. E. C. Dickson, Assistant in Pathology; Dr. E. D. Downing, Assistant in Pathology; Dr. Walter Henry Gibbons, Gynecology; Dr. A. B. Spalding, Obstetrics; Dr. R. L. Rigdon, Genito-Urinary Surgeon; Dr. H. B. Graham, Otology, Laryngology and Rhinology; Dr. A. B. McKee, Ophthalmology; Dr. H. E. Alderson, Dermatology; Dr. L. Porter, Pediatrics; Dr. H. H. Yerington, Assistant in Pediatrics; Dr. W. F. Schaller, Neurology.

Arrangements were also completed with the San Francisco Society for the Study and Prevention of Tuberculosis so that a branch of the Medical Clinic under the charge of Dr. W. R. P. Clark is held in their building at 1547 Jackson Street.

The building for the Lane Medical Library has been constructed during the year directly across the street from the Clinical Laboratory building. With the removal of the books to the new library it became possible to begin the alterations required in order to provide adequate facilities for the outpatient service.

A complete curriculum for the four years in Medicine was adopted and arranged by the medical faculty during the year. Regulations were

also made for the required senior thesis and for the granting of advanced degrees by the Department of Medicine.

On July 1, 1912, the Lane Hospital came under full control of the Board of Trustees of Stanford University. Its management was vested in the Clinical Committee. Dr. George B. Somers has been made Physician Superintendent. Special arrangements have been made by the Board of Trustees for the conduct of the Hospital, which will permit it to continue along the lines so successfully followed by the Executive Committee of the Cooper Medical College. The combined care of private and clinical patients gives from fifty to sixty-five cases daily for clinical teaching and maintains the hospital. During the year arrangements were made with the San Francisco Maternity and with the Associated Charities for the Fruit and Flower Mission for the control of a certain proportion of their obstetrical cases.

During the year there has been a fairly wide-spread discussion as to the desirability and feasibility of uniting the medical departments of the two universities. A conference was held at the request of the President of the University of California and a tentative plan was presented by Stanford University with the aim of organizing one large institution for the teaching of medicine in San Francisco, but without result.

The Lane Medical Lectures were endowed with \$20,000 by the Directors of Cooper Medical College. The lecturer for the year 1913 will soon be selected by the faculty. The former friends and pupils of Dr. Henry Gibbons, Jr., have started in his memory a fund for the endowment of a portion of the Lane Medical Library, to be known as the "Henry Gibbons, Jr. Library of Obstetrics and Gynecology." Through a gift from Mr. C. A. Coffin, of New York, a research fund for the study of tropical diseases was established. Mrs. Emily B. Hopkins gave \$10,000 to the hospital for the endowment of a bed. The liberal gifts received by the hospital and the medical library indicate that the Medical Department may anticipate further additional financial assistance when it is once known that the gifts will serve the double purpose of providing help to the sick poor and of advancing medical education and medical science.

A statement from the individual divisions of the Medical Department, including Lane Hospital, follows. These reports do not include the departments of Physiology and Histology, of Chemistry and of Zoology, the courses given by these departments taken by medical students being given under the departmental reports.

ANATOMY.

During 1911-12 the work in Anatomy was done by Frank Ellsworth Blaisdell in San Francisco and by the undersigned in Stanford University. After the resignation of Dr. Ruskin M. Lhamon, the instructorship held by him was not filled during the year until the appointment of Dr. E. D.

Congdon of Cornell University. Dr. Lhamon's services in this institution were most faithful and he has since completed an investigation begun at Stanford on the atrio ventricular bundle, and also one on the anatomy of a human embryo.

In the following table a list of the courses, with the attendance in each, is given:

INSTRUCTOR	COURSE	Unit Hours	ATTENDANCE	
			1st Sem.	2nd Sem.
Blaisdell.....	Topographical and Applied Anatomy.....	3	.....	10
Blaisdell.....	Special Work.....	.....	.....	5
Meyer.....	Dissection.....	2-5	40	33
Meyer.....	Osteology.....	2-3	22	.....
Meyer.....	Topographical Anatomy.....	3	.....	4
Meyer.....	Conferences.....	3	.....	15-38*
			62	90

* The variation in attendance was due to the fact that only those having completed the dissections could profit by attendance at all conferences.

The space allotted to Anatomy at Stanford University has been extended considerably during the year and the material available both at Stanford and in San Francisco has been enlarged by the addition of numerous preparations made by the staff. The collection of this material has been an arduous task, but our students now have the opportunity to study an extensive and unique collection of anatomical material. The presence of an adequate teaching equipment and a technical assistant will now make it possible to direct attention more effectively to the productive activities of the division.

About one-half of the students taking Anatomy were outside the medical department, 4 medical students doing advanced work and 5 physicians being enrolled in the division in San Francisco. Approximately 50 per cent of the students in Anatomy were graduates and 20 per cent were women.

ARTHUR WILLIAM MEYER,
Professor of Anatomy.

BACTERIOLOGY.

During the year the teaching staff of the Division of Bacteriology consisted of Hans Zinsser, professor; and Arthur Meinhard, technical assistant.

The courses given during the first semester consisted of: 1. The laboratory and lecture course planned primarily for medical students (three lectures and five and one-half hours laboratory work per week,

4 units). 2. A two hour a week, two unit, lecture and demonstration course in the principles of infection, immunity, serum therapy and diagnosis. The laboratory course was attended by 13 first and second year medical students and 19 students from other departments, making a total of 32. There were 30 students registered in the course in Immunity. In addition, 2 special workers, one a physician, the other a graduate student, were doing special work in the laboratories of the division. During the second semester no set courses were given except a short course of six lectures and demonstrations on general bacteriological methods and the bacteriology of water supplies, given for the Department of Civil Engineering at the request of Professor C. D. Marx. During this semester, however, special courses were taken in the division laboratories by 9 students, all of whom had taken the preliminary courses in bacteriology, 2 of whom were taking the work as a minor for the degree of A. M. These major students in Chemistry worked upon and completed a piece of work on "Cataphoresis and Agglutination of Bacteria and Serum Proteids," carried out under the joint supervision of the Department of Chemistry and this division. The work of the other students was divided as follows: 2 made studies in the technique of serum reactions; 2 completed and published a study on Endo's Medium and the Paratyphoid Group; 1 worked on a special problem in water bacteriology; 1 on the cultivation of the Spirochaete; and 1 on a special problem of the cultivation of the tubercle bacillus.

The special work of the division staff during the past year concerned itself chiefly with the problems of bacterial precipitins, anaphylaxis, and rat leprosy.

During the past year the equipment of the division has been improved and a number of minor changes in the arrangement of the laboratory space carried out. In considering the arrangement of courses for future years, it seems that it would be best to limit attendance in Course I, the laboratory and lecture course given during the first semester, to medical students and to those who have had at least two years of university work, including Chemistry and General Biology, since the equipment and space of the laboratory at present is just about suitable for a maximum class of 25 students. During the past year there were admitted to the course a few students who had had one year only of laboratory work and the total number of 32 in this course resulted in considerable crowding.

HANS ZINSSER,
Professor of Bacteriology.

MEDICINE.

The teaching staff of this division consisted of Ray Lyman Wilbur, Joseph O. Hirschfelder, professors; William F. Cheney, Langley Porter, clinical professors; Harold Hill, Harry E. Alderson, associate clinical

professors; Thomas Addis, assistant professor; W. W. Boardman, W. R. P. Clark, E. C. Fleischner, Morton R. Gibbons, Florence M. Holsclaw, Walter F. Schaller, clinical instructors.

The following courses were offered:

INSTRUCTOR	COURSE	Hours per Week	ATTENDANCE	
			1st Sem.	2nd Sem.
Wilbur, Addis...	1. Physical Diagnosis	4½	.....	11
Wilbur.....	2. Physical Therapeutics.....	2	.....	11
Wilbur, Cheney, Addis.....	3. Medicine, Section Work in Clinics.....	11	7	.....
Wilbur, Cheney, Addis.....	4. Medicine, Section Work in Clinics.....	7	.....	7
Wilbur, Addis...	5. Experimental Medicine....	5	7	.....
Addis.....	6. Clinical Pathology	2½	7	7
Porter, Fleischner....	7. Pediatrics.....	2	.....	7
Hirschfelder....	8. Nervous Diseases.....	2	.....	7
			21	50

During the year Drs. Wilbur and Addis did considerable experimental work upon Urobilin. The outpatient clinic was conducted by Professors Wilbur and Addis and Assistants W. C. Alvarez, W. R. P. Clark, W. H. Banks, C. E. Hyde, G. D. Lyman, P. H. Luttrell, H. F. Adler. The students in medicine attended this outpatient clinic as well as the medical wards of Lane Hospital. The total number of cases seen in the outpatient medical service was 8269, distributed as follows: Outpatient clinic, 7392; tuberculosis clinic, 877; medical ward Lane Hospital, 209.

Since July 1, 1912, the men's medical service at Lane Hospital has been conducted by Dr. Wilbur, the women's medical service by Dr. Cheney, and the medical service at the City and County Hospital by Dr. Hill. Dr. Walter W. Boardman has been Actinographer at Lane Hospital.

Students in Pediatrics have worked in the outpatient children's clinic, in the children's ward of Lane Hospital and have also had the opportunity of studying contagious cases at the San Francisco Hospital for Contagious Diseases.

Instruction was given by Dr. J. O. Hirschfelder in the neurological clinic of Cooper Medical College to the junior students during the second semester of the year. Early in May the neurological clinic was placed in the hands of Stanford University under the supervision of the executive of the Division of Medicine, under the direct control of Dr. W. F. Schaller, and Dr. R. G. Van Nuys, assistant.

The dermatological clinic was placed in charge of Professor Alderson on the 1st of July and is being largely attended.

The work in Psychiatry will begin in the year 1912-13, under the direction of Dr. Andrew W. Hoisholt.

RAY LYMAN WILBUR,
Professor of Medicine.

OBSTETRICS AND GYNECOLOGY.

In this division the work was carried on by Alfred Baker Spalding, professor; George B. Somers, clinical professor; and Walter H. Gibbons, clinical instructor.

The number of students registered in the division was 7. By arrangement with the San Francisco Maternity and Associated Charities an obstetrical service has been developed which has averaged over 35 confinements per month, about equally divided between hospital and home services. Junior students have acted as assistants in this department, each serving a period of two weeks, during which time they have witnessed the care of hospital patients and have carried out the same treatment with the home confinements under the supervision of Dr. Rude and the head outpatient obstetrical nurse, Miss Hill.

The plans are practically completed for the opening of a laboratory for the study and the preservation of pathological specimens from the gynecological operative service, and a nurse is in training for the position of technical assistant in this laboratory.

ALFRED BAKER SPALDING,
Professor of Obstetrics and Gynecology.

PATHOLOGY.

The personnel of the division was made up of William Ophüls, professor; Ernest C. Dickson, assistant professor.

The following table shows the courses given in the division during the year and the attendance of students:

INSTRUCTOR	COURSE	Hours per Week	ATTENDANCE	
			1st Sem.	2nd Sem.
Ophüls, Dickson.	1. General Pathology.....	5	.....	11
Ophüls, Dickson.	2. Pathological Histology.....	7½	.....	11
Ophüls, Dickson.	3. Special Pathology.....	.....	7	7
			29	

In addition the last class of Cooper Medical College (37 students) were instructed in Special Pathology and Applied Bacteriology.

Professor Ophüls continued his anatomical and experimental studies on chronic nephritis and made several reports in regard to this subject

to the Society of Experimental Biology and Medicine. A report was prepared on the occurrence of nephritis in a series of one thousand unselected necropsies and in conjunction with Dr. George W. McCoy of the United States Public Health Service on "Spontaneous Nephritis" in rats.

Professor Dickson continued his work on experimental nephritis and published a report on the experimental production of nephritis in animals by the use of uranium nitrate. He also prepared several shorter reports and demonstrations for various local medical societies.

Dr. S. L. Haas of the surgical department of Cooper Medical College continued his work on regeneration of bone.

Dr. J. O. Hirschfelder continued his studies on specific therapy in pneumonia and other infectious diseases.

Mr. L. Langstroth, a student of Cooper Medical College, did his thesis work on the hypophysis.

WILLIAM OPHÜLS,
Professor of Pathology.

PHARMACOLOGY.

The work in this division was conducted by Professor Albert Crawford, assisted by Mr. J. P. Crawford. Thirteen students were registered in the laboratory and lecture courses during the first semester and 12 during the second semester. In the second semester 2 students were at work at Stanford and the rest in San Francisco. This division of the work, thus rendered necessary, consumes a disproportionate amount of the professor's time.

During the year a paper was issued from this division upon "The Pressor Action of an American Mistletoe." Others will appear soon.

ALBERT CORNELIUS CRAWFORD,
Professor of Pharmacology.

SURGERY.

The personnel of the teaching staff of this division for the year has been as follows: Stanley Stillman, Emmet Rixford, professors; Adolph Barkan, professor emeritus; Rufus L. Rigdon, clinical professor (Genito-Urinary); Albert B. McKee, clinical professor (Ophthalmology); Edward C. Sewall, clinical professor (Otology, Laryngology, Rhinology); H. B. Graham, assistant clinical professor (Otology, Laryngology and Rhinology); James Eaves, instructor; and Leo Eloesser and Sol Hyman, clinical instructors.

The following table shows the courses given during the year:

INSTRUCTOR	COURSE	Hours per Week	ATTENDANCE	
			1st Sem.	2nd Sem.
Rixford	1. Fractures, dislocations, deformities	2	.....	10
Stillman, Eaves .	2. General Surgery	2½	.....	10
Stillman, Rixford .	3. Regional Surgery	3	7	7
Eaves	4. Special Surgical Pathology..	4	7	7
Stillman, Eaves .	5. Surgery, Clinics and Section work	4	7	7
			21	41

The surgical ward of the Lane Hospital afforded abundant opportunities for bedside teaching. Instruction was given in diagnosis and history taking, both there and in the surgical clinic in the outpatient department. The total number of cases in the surgical clinic treated during the year was 7717, of which 1812 were new cases. With the enlarged facilities in the clinical building for the coming year, the attendance at the clinics will undoubtedly be larger and the material handled to far greater advantage than in the past. The total number of patients maintained in the surgical ward of Lane Hospital was 303, most of which were operative cases, many of an exceedingly interesting nature.

The surgical work at the City and County Hospital, which came under the control of Stanford on July 1st, was in charge of Professor Emmet Rixford and Drs. Leo Eloesser and Sol Hyman.

In the Genito-Urinary Surgery, Dr. R. L. Rigdon was in charge of the outpatient dispensary. He was assisted by Chester H. Woolsey and Frederick M. Gedney. This clinic is large and, in conjunction with the clinical beds of Lane Hospital, furnished an adequate amount of material for teaching purposes.

In Ophthalmology the large outpatient eye clinic, which afforded abundant opportunity for clinical study, was under the direction of Dr. A. B. McKee, assisted by J. R. Burrows and A. S. Green.

The clinic of Otology, Laryngology and Rhinology was, in the absence of Dr. E. C. Sewall, conducted by Dr. H. B. Graham, assisted by H. Y. McNaught. It comes in the afternoon and was unusually well attended. A considerable number of clinical patients were taken care of in the Lane Hospital by the men in charge of this service.

STANLEY STILLMAN,
Professor of Surgery.

HYGIENE AND PUBLIC HEALTH.

The division of Hygiene and Public Health is under the charge of Dr. William F. Snow, clinical professor, but no courses have been given as the work comes in the senior year in Medicine.

LANE HOSPITAL.

The University took charge of the Hospital on July 1, 1912, and consequently this report covers only one month of University control.

By resolution of the Board of Trustees, every member of the faculty of the Medical Department who has actual duties to perform in Lane Hospital thereby becomes a member of the Hospital Staff. The committee in charge of Lane Hospital is composed of Dr. Ray L. Wilbur, chairman; Dr. George B. Somers, secretary; Dr. William Ophüls, Dr. A. B. Spalding and Dr. Stanley Stillman. Dr. George B. Somers also holds the position of Physician Superintendent, and Dr. H. R. Oliver that of Serologist. The clinical laboratory is in charge of Dr. Thomas Addis.

The Senior Internes doing work in the Hospital are Dr. James A. Cutting, in Medicine; Dr. Edmund Butler, in Surgery; and Dr. Lester Kimberlin, in Obstetrics and Gynecology. The Junior Internes are Drs. Lovell Langstroth, Warren McNeill, Adolph Schmidt, L. O. W. Moore and Leo Stanley.

For the month of July, the average number of patients treated per day was 122.3, divided as follows: Private, 54; Clinic, 55.6; Associated Charities, 4.1; Fruit and Flower, 3; Free, 5.6. The total number of patients admitted for the month was 386.

The present accommodations in the Hospital answer fairly well for the double purpose of providing for both private and clinic patients.

In the Training School Miss Frances Hollister Cooper is acting as superintendent of nurses, Miss Florence Sperry as assistant superintendent, Miss Hattie M. Visher as head nurse in operating room and Miss Lottie B. Sloan as dietitian. The number of nurses enrolled for July was 75, distributed as follows: Third year, 33; second year, 23; first year, 19. Of these nurses, 40 are employed on general duty, 5 in the diet school, 8 in the operating room, 5 in the clinics, 11 on night duty and 1 on special administrative duty.

In the operating department the number of operations on private patients for July was as follows: Major, 31; minor, 67; plaster casts, 6; cystoscopic examinations, 5; dressings, 1; treatments, 8. In the clinical department the number of operations were: Gynecological, 11; genito-urinary, 19; surgical, 26; eye, ear, nose and throat, 34.

In the department of Actinography, under charge of Dr. Walter W. Boardman, during the month of July, 189 patients were examined, 274 X-Ray plates made, and 22 photographs taken.

The outpatient obstetric service, in charge of Dr. A. B. Spalding,

with Miss Ann Hill as assistant, cared for 17 confinement cases. Applications were received from 37 patients, distributed as follows: Stanford service, 10; Fruit and Flower, 11; San Francisco Maternity, 16. This service is one of the most satisfactory in the Hospital except in respect to accommodations. It is certainly of enough importance to be worthy of being housed in a separate maternity building.

The outpatient department for the month of July showed an attendance of 1103 new patients and 3646 visits of old patients, making a total of 4749 visits. The large number of patients attending the clinics has been handled with some difficulty in the past, owing to lack of room, lack of conveniences and poor light. With the completion of the improvements now under way, all departments will be comfortably quartered and the work of caring for the sick poor much more satisfactorily accomplished.

The recently inaugurated History Room or Bureau of Records, where charts and records are carded and filed, is a source of much convenience in looking up histories. The work of filing is progressing satisfactorily and is nearly up to date.

GEORGE B. SOMERS,
Physician Superintendent.

THE MARINE BIOLOGICAL LABORATORY.

The 21st session of the Marine Biological Laboratory at Pacific Grove began on Wednesday, May 29th, and continued for six weeks, closing on July 10th.

The laboratory was in charge of Professor F. M. McFarland, aided by Mr. Howard F. West, assistant in General Zoology; Mrs. Olive H. McFarland, assistant in Embryology and Microscopical Technique; and by Mr. Frank J. Smiley as laboratory attendant.

Twenty-five students were in attendance, distributed as follows:

Course 1. General Marine Zoology, 15 students.

Course 2. Advanced Marine Zoology, 4 students.

Course 3. General Embryology, 6 students.

Each of the above courses consisted of a minimum of 7 hours per day laboratory work, with frequent lectures and collecting trips.

The following investigators made use of the facilities of the Laboratory at various times during the year:

Professor L. S. Kroeck, of the College of the Pacific, made collections of zoological material.

Dr. E. Stechow, of the Zoological Museum of the University of Munich, studied and collected certain Coelenterata of the region.

Mr. W. F. Thompson, a student in the Department of Zoology, worked upon the development of the Gephyrea.

In addition to the above named persons the laboratory has been used

at intervals during the year by different members of the biological departments of the University for the collection of material and for such studies as their time would permit. Class excursions to the laboratory, as in former years, have also been made at intervals. From the foregoing summary it may be seen that the laboratory plant is in practically continuous use throughout the year, and not merely during the six weeks of the summer session during which formal instruction is given.

FRANK M. MCFARLAND,
Instructor in Charge.

APPENDIX II

REPORTS OF COMMITTEES

STUDENT AFFAIRS.

The members of the committee for the year were: Dr. Orrin Leslie Elliott, Professor John Charles Lounsbury Fish, Associate Professors Ernest Whitney Martin, John Otterbein Snyder and Arthur Bridgman Clark; also Mrs. Evelyn Wight Allen (member in matters concerning women).

The troubles of the year have been few, the chief work of the committee has been constructive rather than repressive, still discipline has been imposed as follows:

NO. OF STUDENTS	OFFENSE	DISCIPLINE
1	Ungentlemanly conduct and lack of business integrity ..	Limited suspension made permanent.
1	Fraud in examination or in class work.....	Suspension for one semester.
1	Fraud in examination or in class work.....	Dropped from course concerned.
1	Fraud in examination or in class work.....	Dropped from course concerned. and 10 hours added to graduation requirements.
3	Rowdyish behavior on Campus at late hour.....	Suspension for two weeks.

In the last report it was indicated that the attitude of student leaders gave much hope for sympathetic cooperation on their part in accomplishing the duties delegated to this committee. The expectations for the present year have been fully realized. The Women's Conference for the women students and the Men's Conference for the men students, have during the year formally assumed the responsibility for student control and regulation of student activities. As applied to the women the plan has been in operation since November 22d, and as applied to the men, since March 30th.

The women of the University have been developing capacity for self-government in two conspicuous situations: First, in the student government of Roble Hall, where, under the able leadership of Miss Shirley

Hyatt, and of her successor, Mrs. E. J. Rolker, as Mistress of the Hall, an effective system of student control has been maintained; second, the "Pan Hellenic" organization, which has exercised certain control over the conduct of sorority women, especially in methods incident to obtaining new members, has handled difficult situations with success.

The Women's Conference is formed by the election of 15 representatives from department groups. These 15 elect from their own members a committee of 5, known as the "Women's Student Council," to exercise the authority of student government.

The activities of this student "Council" follow:

On February 8th it mailed to sorority houses a communication of disapproval of certain conduct connected with a sophomore picnic and requested that measures be taken to prevent similar occurrences in the future.

On February 22d it recommended to the Faculty Committee that a young woman be dropped from a course for cheating.

On March 13th the Council recommended as follows:

"The Women's Student Council recommends to the Student Affairs Committee that no more sororities be admitted into Stanford University while the 500 limit for women exists, for the following reasons:

"1. The admission of one more sorority would encourage the entrance of others into an already crowded field, 8 sororities among 500 being a large proportion.

"2. The admission of more sororities would tend to destroy the balance that now exists between fraternity and non-fraternity women.

"3. The Council is in favor of Sophomore Pledge Day and the entrance of a new sorority would tend to delay the accomplishment of that end."

This recommendation was adopted by the Faculty Committee.

On April 12th a joint meeting of the Men's and Women's Councils was held, at which the following resolution was adopted:

"That 'ragging' at any social function shall be considered a breach of good conduct subject to disciplinary action by these committees."

This resolution was sent to all houses in which students reside, together with the following communication:

"Attention is called to the University regulation that all functions must close at 12 o'clock. The interpretation of this rule includes after-party suppers, dances and receptions and after-dance suppers. Further attention is called to the fact that this and other University regulations hold during mid-term and Christmas vacations."

On May 6th, to secure a uniform closing hour, it passed the following:

"All houses in which women students reside must be closed by 10:30 P. M. every night."

The report of the Women's Council to this Committee closes as follows:

"The present Council on retiring wishes to express its faith in the ultimate success of Student Government. There are still a great many details to be worked out and many problems will arise to be settled in the future, but if the cooperation of the women continues to be as sincere and helpful as has been the case in the past semester, we feel that every difficulty can be overcome."

Misses Linda Bell, Dorothy Marx, Ruth Sampson, Gertrude Workman and Nina Moise (Chairman), constituted the Women's Student Council.

In April this Committee stated conditions under which it felt willing to delegate its functions of government of the men in the following terms:

"The understanding in accordance with which the Committee on Student Affairs is ready to sanction the assumption of responsibility for the government of the men of the University by the University Conference, as at present organized, is the same as in the case of women, and is as follows:

"1. The standards of conduct and regulations governing students adopted by the University and exercised through its Committee on Student Affairs, shall remain in force and be maintained by the University Conference.

"2. The University Conference is authorized to make such other rules, not inconsistent with University regulations, as it may deem wise and expedient.

"3. Cases involving discipline shall be considered by the Men's Student Council and recommendations made to the Committee on Student Affairs.

"4. At the end of each semester a written report of the activities of the University Conference shall be filed with the Committee on Student Affairs.

"The authority hereby delegated may be withdrawn at any time, when the interests of the University seem to require such action.

"It should be noted that the matter of student conduct and the maintenance of University standards is intrusted to the Committee on Student Affairs both by the Board of Trustees and by the Faculty of the University, and that there is no way in which the Committee can rid itself of this final responsibility. All action involving University discipline must necessarily be confirmed by the Committee.

"If the University Conference shall decide to assume responsibility for the government of the men of the University, it is the purpose of the Committee on Student Affairs to delegate its functions to the Conference to the fullest extent possible and to provide full scope for the exercise of student control. So long as University standards are maintained, so long as the men shall actually handle the situation, the Committee expects to sustain the Conference and to approve its findings. Beyond this the Committee has no authority to go."

The whole matter was amply discussed by the men, both in general assembly and in print, and the matter of assuming student control or not assuming it was finally decided at an election held on March 20th, at which 536 voted for and 75 against. The Men's Student Council forthwith assumed control with the following members: Kenneth Dole, chairman; Maurice T. Dooling, Karl L. Schaupp, Lester D. Summerfield and Richard Henry Seward; Student Adviser Almon E. Roth was also present at all meetings.

This student committee has frequently during the past four years been called in council by the faculty committee and has assisted in arriving at decisions in matters of policy and measures of discipline, so that the assumption of full authority on its part was accepting duties with which its members were somewhat familiar.

On April 12th a student was declared ineligible for participation in student activities for the remainder of the year, because he had violated the closing rule.

A fraternity reported to the Student Council an independent action on its part by which it has caused 3 of its members to withdraw from the University for a considerable period, as a penalty for the violation of a University regulation.

This action was taken in the belief that support of the principle of student control required the assumption of its responsibilities by individual groups of students.

The instances above given of the operation of "Student Control" make comment unnecessary. So long as the students choose as their representatives men and women of the character of those who have constituted the two student councils of this year the older University authorities will have no cause for anxiety.

ARTHUR BRIDGMAN CLARK,
Chairman.

DELINQUENT SCHOLARSHIP.

The records of the Committee action in 1911-12 may be classified as follows:

Withdrawals.....	45
First Failures.....	112
Probation other than First Failure.....	61

Of the 45 withdrawals on account of deficiencies in scholarship, 21 had received "first failure" in the preceding semester, 11 some earlier semester, while 13 were "first failures" adjudged by the Committee to be "unusually serious" and so denied a second trial.

Of the total of 157 failures for the year, 143 were men and 14 women;

or, stated in percentage of the number of each group registered in the University, 11 per cent of the men failed and 2.5 per cent of the women.

In the following table, men and women are grouped separately by residence, the percentage of failures being given for each group:

RESIDENCE	MEN	
	TOTAL NUMBER	PER CENT OF FAILURES
Palo Alto and Mayfield.....	290	14
Encina Hall.....	303	6
Private Residence on Campus.....	100	9
"Commuters" (from San Jose, etc.)....	100	9
Fraternities.....	416	15
	WOMEN	
	TOTAL NUMBER	PER CENT OF FAILURES
Palo Alto and Mayfield.....	100	3
Roble Hall.....	108	2
Madrono Hall and private residence on Campus.....	135	3.7
"Commuters" (from San Jose, etc.)....	30	0
Sororities.....	192	2

Comparing this table with the similar one published in the President's Report for 1911, an interesting correspondence is observed. In both years the most favorable residence for men, so far as their scholarship is concerned, is Encina Hall, and least favorable is the fraternities. Among the women no failures are recorded among those who live away from the University and pass back and forth daily on the trains. Roble Hall and the sororities are equal in their reaction on scholarship, and the least favorable conditions would seem to be found in private residences on the campus and in the neighboring towns of Palo Alto and Mayfield.

CHARLES HENRY GILBERT,
Chairman.

APPENDIX III

REPORT OF THE REGISTRAR.

The number of students in attendance in 1911-12 was 1774. Of these, 1203 had previously been in attendance, 571 were new students. As compared with 1910-11, there was an increase in old students of 26 and a decrease in new students of 10, making total increase of 16.

STATISTICS OF REGISTRATION, 1907-1912.

	1907-08	1908-09	1909-10	1910-11	1911-12
Old students.....	1164	1133	1135	1177	1203
New students.....	574	534	609	581	571
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	1738	1667	1744	1758	1774
Percentage of old students returning.....	69.7	65.1	68	67	68.4
From California.....	1438	1319	1364	1371	1377
From other States.....	300	348	380	387	397
Percentage outside California	17.2	20.8	21.8	22	22.4

AVERAGE AGE OF MATRICULATION.

Graduates†.....	28.7	28.3	28.2	29.7	25.6
Advanced standing.....	22.8	22.3	22.5	21.6	22.4
Freshmen.....	20.4	19.9	20.2	21.5	20.2
Specials.....	25.1	24	23.7	26.5	23.2

† From other colleges.

AGE OF FRESHMEN AT MATRICULATION.

Under 17.....	4	4	5	4	8
17-18.....	41	33	29	35	41
18-19.....	104	89	104	108	104
19-20.....	123	111	117	122	94
Over 20.....	135	143	145	123	128
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	407	380	400	392	375

STATISTICS OF ENTERING CLASS, 1911-12.

	NUMBER ENTERING.	NUMBER RETURNING 1911-12.	FAILED IN SCHOLARSHIP.
From Colleges—			
Graduates.....	33	7 (21%)	2 (6%)
With advanced standing	109	71 (65%)	14 (13%)
Without advanced standing.....	7	6 (86%)	0
	<hr/> 149	<hr/> 84 (56%)	<hr/> 16 (10.7%)
From Normal Schools.....	10	6 (60%)	2 (20%)
From Preparatory Schools—			
On recommendation			
(wholly or mainly):			
In full undergraduate			
standing.....	361	283 (78%)	31 (8.6%)
In partial standing....	5	5 (100%)	1 (20%)
Wholly on examination:			
In full standing.....	1	1 (100%)	
In partial standing....	0	0	
	<hr/> 367	<hr/> 289	<hr/> 32
As special students.....	45	26 (57.7%)	9 (20%)
	<hr/> 571	<hr/> 405 (71%)	<hr/> 59 (10%)

COMPARATIVE NUMBERS AT MATRICULATION.

	1910-11	1911-12
From Colleges—		
Graduates.....	48	33
With advanced standing.....	101	109
Without advanced standing.....	18	7
	<hr/> 167	<hr/> 149
From Normal Schools.....	19	10
From Preparatory Schools—		
On recommendation (wholly or mainly):		
In full undergraduate standing.....	349	361
In partial standing.....	5	5
Wholly on examination:		
In full standing.....	2	1
In partial standing.....	0	0
	<hr/> 356	<hr/> 367
As special students.....	39	45
	<hr/> 581	<hr/> 571
Total.....	581	571

CLASSIFICATION BY MAJOR SUBJECTS.

	1908-09	1909-10	1910-11	1911-12
Greek.....	15	11	4	10
Latin.....	45	40	42	38
Germanic Languages.....	81	94	77	78
Romanic Languages.....	36	40	35	35
English.....	165	149	153	139
Philosophy.....	6	5	5	5
Psychology.....	3	3	6	6
Education.....	37	39	57	52
History.....	139	152	185	188
Economics.....	144	157	149	136
Law.....	37	86	124	113
Pre-Legal.....	211	189	188	177
Graphic Arts.....	33	47	51	53
Mathematics.....	28	22	22	24
Applied Mathematics.....	...	...	1	1
Physics.....	11	13	13	15
Chemistry.....	79	79	66	82
Botany.....	31	29	25	29
Physiology.....	55	70	61	76
Anatomy.....	...	...	2	4
Bacteriology.....	...	...	2	1
Zoology.....	30	24	19	14
Entomology.....	9	13	16	18
Geology and Mining.....	127	100	102	98
Civil Engineering.....	169	196	182	179
Mechanical Engineering.....	63	69	51	58
Electrical Engineering.....	113	108	109	120
Medicine.....	...	15†	17††	35†††
	1667	1744	1758	1784

† Including 6 also counted under Physiology.

†† Including 6 also counted under Physiology.

††† Including 9 also counted under Physiology; 1 under Chemistry.

DISTRIBUTION OF ENTERING CLASS, 1911-1912.

FROM COLLEGES, ETC.

Albany (Ore.) College.....	2	Throop Polytechnic College...	2
Augustana College	2	University of California.....	13
Beloit College	1	Chicago	4
Brennan College	1	Cincinnati	1
Buchtel College	1	Colorado	3
Butler College	1	Denver	2
Carleton College	1	Illinois	2
Clark College	1	Indiana	2
Clark University	1	Iowa	1
Colorado Agricultural College.	1	Melbourne	1
Colorado College	1	Michigan	4
Columbia University	1	Minnesota	1
Cornell University	2	Missouri	2
Depauw University	2	Nebraska	2
Hamilton College	1	Nevada	2
Hiram College	1	New Mexico ..	1
Huron College	1	Oregon	1
Illinois Women's College.....	1	Pacific	3
Iowa State College.....	1	Pennsylvania ..	1
Iowa Wesleyan	1	So. California...	13
Kansas University	1	Tennessee	1
Lake Forest College.....	2	Texas	2
Massachusetts Inst. of Tech...	1	Utah	3
Mills College	3	Washington	1
Northwestern University	2	West Virginia ...	1
Occidental College	5	Wisconsin	2
Ohio State University	1	Ursinus College	1
Peabody College	1	Waseda University	1
Pennsylvania State College....	1	Washburn College	1
Pomona College	12	Washington State College....	1
Purdue University	1	Wellesley College	2
Rockford College	1	Western Reserve College....	1
St. Mary's College.....	3	Western Union College.....	1
Santa Clara College.....	2	Whitman College	1
Smith College	5	Willamette University	2
Swarthmore College	2	Yale University	2

FROM NORMAL SCHOOLS.

Chico State Normal.....	1	Nebraska State Normal.....	1
Jamaica (N. Y.) State Normal	1	San Diego State Normal.....	1
Los Angeles State Normal....	2	San Jose State Normal.....	5

FROM PREPARATORY SCHOOLS.

Academy of Idaho.....	1	El Centro H. S.	1
Alhambra H. S.	1	Elmira Free Academy	1
Allen Preparatory School....	1	Escondido H. S.	3
Allen School (Mass.).....	1	Eureka H. S.	3
All Hallow College.....	1	Everett (Wash.) H. S.	2
Astoria (Ore.) H. S.	2	Fort Wayne (Ind.) H. S.	1
Bakerfield H. S.	1	Fowler H. S.	1
Bandon (Ore.) H. S.	1	Fremont H. S.	1
Barnard Preparatory School..	1	Fruita H. S.	1
Belmont School	2	Fullerton H. S.	1
Beloit (Kans.) H. S.	1	Girls' Collegiate School.....	2
Berkeley H. S.	2	Girls' High School (S. F.)....	1
Berkeley Preparatory	1	Glenwood Springs (Colo.) H. S.	1
Boise (Ida.) H. S.	2	Grand Junction (Colo.) H. S..	1
Boone's University School....	1	Hamlin School	2
Branham & Hughes School...	1	Hanford H. S.	2
Brighton (Mass.) H. S.	1	Harker School	3
Brisbane Technical College...	1	Harvard School	2
California Sch. Mech. Arts...	2	Heber Collegiate Institute....	1
Campbell H. S.	7	Hill Military Academy.....	1
Carthage (Mo.) H. S.	1	Hitchcock Military Academy..	1
Case School of Appl. Science.	1	Homerian Hall	1
Castilleja School	6	Hoquiam (Wash.) H. S.	1
Castle Heights (Tenn.).....	2	Huntington Beach H. S.	2
Centerville H. S.	1	Huntington Hall	2
Chadron (Nebr.) H. S.	1	Huron (S. D.) H. S.	1
Chico H. S.	3	Kansas City H. S.	1
Citrus H. S.	1	Kern Co. H. S.	2
Clear Lake Union H. S.....	1	Lassen County H. S.	1
Cleburn (Tex.) H. S.	1	Lehi (Utah) H. S.	1
Cogswell Polytechnic H. S. ...	1	Lewiston (Ida.) H. S.	1
Colorado School Mines.....	2	Lick H. S. (S. F.).....	1
Colton H. S.	1	Lincoln H. S. (Portland)....	1
Compton H. S.	1	Long Beach H. S.....	4
Connersville (Ind.) H. S.	1	Los Angeles H. S.....	19
Corona H. S.	2	Los Banos H. S.....	1
Cottage Grove (Ore.) H. S. ..	1	Los Gatos H. S.....	2
Covina H. S.	1	Lowell H. S. (S. F.).....	12
Cranford (N. J.) H. S.	1	Lyceum (S. F.).....	1
Dayton (Ohio) H. S.	2	McKinley H. S.	1
Des Moines (Ia.) H. S.	1	Manor School	1
Duluth (Minn.) H. S.	1	Manzanita Hall	17
El Cajon H. S.	2	Marlborough School	1

Marysville H. S.	2	San Bernardino H. S.	1
Mendocino H. S.	2	San Diego H. S.	2
Merced Co. H. S.	1	San Jose H. S.	16
Mission H. S. (S. F.)	1	San Mateo H. S.	4
Missouri School Mines.	1	Santa Barbara H. S.	7
Monterey H. S.	3	Santa Clara H. S.	3
Morgan Park Academy.	1	Santa Cruz H. S.	2
Morristown (Ia.) H. S.	1	Santa Paula H. S.	1
Mt. Tamalpais Mil. Acad.	1	Santa Rosa H. S.	1
Mountain View H. S.	7	School of Engineers (Mex.) ..	1
Muscatine (Ia.) H. S.	1	Seattle H. S.	1
North Platte (Nebr.) H. S.	1	Secünder School (Zurich)	1
Oahu College Prep.	3	Selma H. S.	1
Oakhurst School (Cincinnati) ..	1	Snohomish (Wash.) H. S.	1
Oakland H. S.	1	Smith Academy (St. Louis) ...	1
Oakdale H. S.	2	Spokane (Wash.) H. S.	7
Occidental Academy	1	Stanton (Nebr.) H. S.	1
Onawa (Ia.) H. S.	1	Stockton H. S.	4
Oregon (Ill.) H. S.	1	Tacoma (Wash.) H. S.	4
Pacific Grove H. S.	2	Throop Polytechnic Inst.	7
Palo Alto H. S.	32	Trinity School (S. F.)	2
Pasadena H. S.	10	Tudor Hall	1
Paso Robles H. S.	1	Tulare H. S.	1
Phillips Andover Academy.	1	Tuolumne H. S.	1
Phoenix (Ariz.) H. S.	1	Ukiah H. S.	2
Polytechnic H. S. (Los A.) ...	16	University of Nevada H. S.	1
Polytechnic H. S. (S. F.)	2	University of Pacific Acad.	1
Pomona H. S.	1	Vallejo H. S.	1
Porterville H. S.	2	Vincennes (Ind.) H. S.	1
Redlands H. S.	5	Virginia Polytechnic Inst.	1
Redwood H. S.	1	Visalia H. S.	2
Richmond (Ind.) H. S.	1	Wakefield H. S.	1
Riverside H. S.	3	Walla Walla H. S.	1
Riverside (Ill.) H. S.	1	Wallace (Ida.) H. S.	1
Roswell (N. M.) H. S.	1	Washburn School	1
Rowland Hall	1	Watsonville H. S.	1
Sacramento H. S.	3	Wayland Academy	1
St. Helena H. S.	1	Webb Academy	1
St. Luke's School	2	Westtown School (Pa.)	1
St. Matthew's School	4	White's Preparatory School ...	2
St. Patrick's Seminary	1	Whitis School (Texas)	1
Salinas H. S.	1	Willits H. S.	1
Salt Lake (Utah) H. S.	4	Woodland H. S.	3
San Benito H. S.	1		

REGISTRATION OF STUDIES.

Fifteen units constitute a normal semester's work. The following was the actual registration during 1911-12:

		NUMBER OF STUDENTS	
		FIRST	SECOND
		SEMESTER	SEMESTER
For 1 unit.....		0	0
2		0	0
3		0	1
4		1	1
5		0	2
6		0	1
7		1	2
8		1	2
9		3	4
10		15	11
11		8	18
12		22	36
13		160	163
14		224	180
15		498	486
16		280	235
17		147	143
18		112	112
19		1	3

PETITIONS BEFORE COMMITTEE ON REGISTRATION, 1911-12.

	FIRST	SECOND
	SEMESTER	SEMESTER
Total number of petitions acted upon.....	891	926
To change registration by dropping subjects, or taking up new subjects, or both.....	694	686
To change major subject.....	60	42
To register for fewer than 13 units.....	†57	††83
To register for more than 18 units.....	3	16
For leave of absence.....	45	63
Miscellaneous.....	55	77

† Of these 57 petitioning for fewer than 13 units, 33 are included in change of registration.

†† Of these 83 petitioning for fewer than 13 units, 41 are included in change of registration.

STATISTICS OF GRADUATION.

The total number of degrees conferred in 1911-12 was 348, distributed as follows:

	Ph. D.	J. D.	A. M.	Engr.	LL.B.	A. B.
Greek.....	1
Latin.....	4	..	..	7
Germanic Languages.....	1	..	3	..	..	16
Romanic Languages.....	6
English.....	6	..	..	25
English Philology.....	3	..	..	..
Philosophy.....	1
Psychology.....	1	..	..	..	..	1
Education.....	5	..	..	10
History.....	5	..	..	31
Economics.....	1	..	..	20
Law.....	..	15	..	..	1	36
Graphic Art.....	7
Mathematics.....	3
Physics.....	2	..	..	2
Chemistry.....	7	1	..	13
Botany.....	1	..	2	..	..	5
Physiology.....	13
Zoology.....	1	..	..	..	..	4
Entomology.....	1	..	..	3
Geology and Mining.....	3	2	..	18
Civil Engineering.....	3	..	35
Mechanical Engineering.....	1	..	5
Electrical Engineering.....	2	..	15
	4	15	42	9	1	277

In the case of the 277 students who received the degree of Bachelor of Arts, the period of residence was as follows:

2 semesters.....	21
3 semesters.....	10
4 semesters.....	18
5 semesters.....	7
6 semesters.....	26
7 semesters.....	19
8 semesters.....	121
9 semesters.....	36
10 semesters.....	11
11 semesters.....	5
12 semesters.....	2
13 semesters.....	1

 277

The 101 students who took their A. B. in less than 4 years were enabled to do this as follows ("Extra courses" meaning courses in excess of the normal 15 units per semester):

Through advanced credit from other institutions	54
Through advanced credit supplemented by extra courses	25
Through advanced credit supplemented by summer work	10
Through advanced credit supplemented by extra courses and summer work	3
Through summer work and extra courses	3
Through credit for extra entrance units and extra courses	2
Through credit for extra entrance units and extra courses and advanced credit	2
Through extra entrance units and summer work	2
	<hr/> 101

THE FACULTY.

IMPROVEMENT OF SCHOLARSHIP.

A recommendation from the Executive Committee, proposing a reduction in the number of one and two unit courses and an increase of four and five unit courses in the University, was taken up as unfinished business at a special meeting of the Academic Council held in September, 1911. Statistics were presented which showed that, under the existing schedule arrangement, the average student must take from five to nine different courses in order to complete his study list. It was argued that this system discourages scholarship, the student's attention being divided among so many subjects that he has no time to make his study bear fruit, and that any course which requires less than one-fifth of a student's study time is a mistake. What constitutes intellectual discipline is the work that the student does for himself, to which he devotes a considerable amount of time. On the other hand, it was pointed out that, in certain subjects at least, a very important result is that which comes directly from the time element, and a permanent impression can be made only by spreading the work over a considerable period. The following statement of policy was adopted by the Council:

"WHEREAS, the fact that a large proportion of students carry too many courses simultaneously is a serious obstacle to efficient work by students and to the maintenance of high scholastic standards by instructors, and

"WHEREAS, this condition is not the fault of students, but is necessitated by the widely prevalent practice of giving courses with small credit-value, therefore be it

"RESOLVED, that the several departments of the University are urgently requested to arrange their work, so far as is practicable, in accordance with the following principles:

"(1) Undergraduate courses in general should have a credit value of not less than 3 units per semester;

"(2) Courses open to first-year students in general should have a credit value of 4 or 5 units per semester."

DISCONTINUANCE OF AUGUST ENTRANCE EXAMINATIONS.

At the meeting of the Council, held September 21, 1911, it was voted, on the recommendation of the Committee on Admission and of the Executive Committee, to omit in future the August entrance examinations and to make the June examinations of the College Entrance Examination Board the only entrance examinations of the University. The reasons which led to this action are summarized in the report submitted to the Council by the Committee on Admission and Advanced Standing, through the Executive Committee and printed in Appendix IV.

GRADUATE STUDY AND ADVANCED DEGREES.

The enlarged Committee on Graduate Study submitted a careful revision of the requirements for advanced degrees which, after some modification, was adopted by the Council January 29, 1912. The changes were mainly regarding minor details, but a distinct modification was made in the requirements for the Degree of Engineer by the insertion of a provision waiving, in part, the residence requirement, in order to permit the carrying on of advanced work with equipment or under conditions not available at the University. The revised requirements also attempted to emphasize more sharply the distinction between undergraduate work and work for the Master's Degree.

In connection with the work of the enlarged Committee on Graduate Study, the Trustees were asked to amend the Articles of Organization by transferring the function of passing on applications for admission to candidacy for advanced degrees from the Committee on Graduation to the Committee on Graduate Study, and this change was duly accomplished.

On recommendation of the Committee on Graduate Study it was also voted to begin the publication of a Graduate Bulletin, setting forth the conditions and facilities for graduate study in the University, but not duplicating the listing of courses given in the regular Announcement of Courses. The first Bulletin of this series was issued in May.

DEGREE OF BACHELOR OF LAWS.

On the recommendation of the Law Department the degree of LL. B., which had been dropped in 1905, upon the establishment of the J. D. degree, was restored. The old LL. B. degree had been given for 3 straight

years in law without other academic studies, and therefore represented considerably less actual accomplishment than the degree of A. B. The new LL. B. is to include 2 years of general college work in addition to the 3 years of Law. The degree of J. D. will still be given to those who complete the 3 years in law and who have previously received the degree of A. B. The degree of LL. B. will thus represent five years' work without the intervening degree of A. B.; the degree of J. D. will represent 6 years' work and will include the degree of A. B.

MINORITY REPORT OF COMMITTEE OF TEN.

The minority report of the Committee of Ten, appointed in 1910 to consider "the entire matter of University policy," was taken up as unfinished business at special meetings of the Council, held October 13th and October 20th, 1911. The minority report dealt with existing conditions in the educational system as a whole and the admitted failure of the schools, from primary grades to the college, adequately to meet the educational needs of the people. Two recommendations were made: First, that the Academic Council initiate a movement looking to a State Commission which should study and report upon the educational system of the state; second, the appointment of a Committee of the Council, whose functions should be that of a clearing house of ideas and methods, and which would act in an advisory capacity to the various departments.

The recommendations of the minority report were adopted after amendment, the first taking the form of a memorial to the Governor of the State. However, objections to this procedure were interposed by the Board of Trustees in a resolution adopted February 23, 1912. A recommendation of the Executive Committee, to which the Trustees' resolution had been referred, was debated by the Council May 17, 1912, and referred back to the Executive Committee for further consideration.

The second recommendation was passed in the following form:

"(1) That each department develop means for the individual training of its students so that it may establish an individual relation with each student as he enters it; that a detailed study—not a single hurried consultation—be made with him of his previous studies and training, his purposes in coming to college, his plans in life, etc., and that his individual course be then arranged, semester by semester, to co-ordinate these, to unify them, to prepare him for taking up, at the end of two years of such personal guidance, his special work in whatever field it may be.

"(2) That during these two years this personal work be so conducted, and such standards of application and accomplishment adhered to, that only those students who genuinely respond shall remain in the University to the end of the period.

"(3) That, in order to aid the department in this innovation, a committee be appointed consisting of one member from each de-

partment (each selected by his own department), which shall be called 'The Committee on Individual Training and Vocational Guidance.' The function of this Committee to be that of a clearing house of ideas and methods—developed here or elsewhere—bearing on the solution of this problem, and passing these on, in an advisory capacity solely, to the various departments. The departments then individually to apply those methods and try those plans best suited to their own peculiar purposes and personnel."

POWERS OF EXECUTIVE COMMITTEE AND ACADEMIC COUNCIL.

A question as to the meaning of the Articles of Organization with relation to the powers of the Executive Committee and Academic Council over the standing administrative committees of the Council, which had been under discussion in the Executive Committee for a period of some months, was brought to the attention of the Council in January, 1912, in a resolution affirming certain powers laid down in the Articles of Organization and defining their meaning. This interpretation was approved by the Academic Council January 12, 1912. An individual appeal being taken to the Board of Trustees, the Board of its own motion, and after informal conference with a sub-committee of the Executive Committee, recast the Articles of Organization in respect to the issues which had been raised. The changes accomplished by the Board are indicated below:

Chapter IV, Section 5.

Old Form: "It (the Academic Council) shall have power to instruct the standing committees as to general policy or general regulations. Appeals from the action of the Academic Committees in special or individual cases, under such regulations or policy, shall be to the Executive Committee of the Council. Appeals from the action of the Administrative Committees in special or individual cases shall be to the President."

Revised Form: "All committees, however appointed, are Committees of the Academic Council and as such may be called on by the Council for reports and may be instructed by the Council in their duties and policy."

Chapter VI, Section 3 (b) 1, d and e.

Old Form: "(d) The other committees of the Council shall submit any change of policy or general regulations or any new measures or general regulations to the Executive Committee for approval.

"(e) The Executive Committee shall formulate the duties and control the policy of the several committees."

Revised Form: "(d) The Academic Council may empower its Executive Committee to act in its place either *ad interim* or in emergencies, and may authorize it to call for reports from all committees in order to prepare matter to lay before the Council.

"(e) The Executive Committee shall not put into effect any new policy until adopted by the Council."

Chapter VI, Section 4.

"All communications between the Council or its Executive Committee and the Standing Administrative Committees shall pass through the President's office."

Chapter VI, Section 5, Appeals.

"(a) Appeals from the action of the Academic Committees in special or individual cases shall be to the Executive Committee, and its decision shall be final.

"(b) Appeals from the action of the Administrative Committees in special or individual cases shall be to the President, and his decision shall be final."

"(c) In case an Administrative Committee doubts the expediency of any instruction received from the Council, it may enter a protest stating its reasons, and thereupon the Council shall vote a second time upon its said instruction, and if a majority vote of all the active members belonging to the Council, including those present and those in residence, whether present or absent, shall be cast in its favor, the instructions shall remain in force; but if the President of the University cannot concur with the Academic Council in any resolution or legislation, he may submit to the Board of Trustees his views as to the matter with the report of the action of the Council."

UNIVERSITY CREDIT FOR SPECIAL WORK.

The University regulation governing credit for special courses not regularly taken in the University nor in other approved universities or schools, was modified so as to make more definite the provision regarding such work and to authorize the various departments to sanction outside work under certain restrictions and safeguards. The regulation as revised is as follows:

"Matriculated students on leave of absence may take work in other universities, usually without any restriction other than those imposed by the institution in question. But work undertaken in any Summer Session may be subject to special regulations, and must be approved by the major department and by the department in which the work is to be taken.

"Work of a special character taken outside of regularly scheduled classes, *in absentia* or during summer vacations, may be credited under the following conditions: (1) The work must be acceptable as part of the major requirements for the A. B. degree in the department by which it is authorized, must be authorized by the department faculty concerned, as well as by the instructor under whom it is to be carried on, must be given adequate supervision and direction and subjected to the same tests

as in the case of regularly scheduled courses, and must be duly registered with the approval of the Committee on Admission and Advanced Standing; if not registered in advance, a fee of two dollars will be charged for late registration; (2) a fee to the University of two dollars per semester unit must be paid before credit is entered.

"The last semester's work of every candidate for a degree must be taken in this University; but in special cases, students who have obtained at least ninety units in resident work and who have completed all major department requirements, may be exempted from this regulation and permitted to register for special courses under the provisions noted above."

METHOD OF VOTING.

At the meeting of the Council, held May 1, 1912, the system of voting in elections to the Advisory Board, Executive Committee, and Committee on Graduate Study was revised, and the so-called Grand Junction plan of a preferential ballot after the first or nominating ballot was substituted for the old arrangement.

APPENDIX IV

DISCONTINUANCE OF AUGUST ENTRANCE EXAMINATIONS.

A report from the Committee on Admission and Advanced Standing, recommending the discontinuance of the August entrance examination given by the University, was approved by the Executive Committee September 21, 1911, and adopted by the Academic Council September 29, 1911.

A recommendation to this same effect was made in February, 1907, and approved by the Executive Committee, but was not sustained by the Council.

Statistics presented in 1907 showed that in the August preceding 145 candidates for admission had taken one or more entrance examinations, 85 of these entered the University, and in the case of 30 entrance had depended on passing one or more examinations. Five entered wholly on examination.

The Committee's report at that time presented the history of the Stanford plan of admission and pointed out that the University had approximated closer and closer its theoretical policy of regarding the successful completion of a regular four years high school course of study as full and adequate preparation for undergraduate standing. The relation between the secondary school and the University had become so mutual and well understood that, in the judgment of the Committee, the school could be trusted to discriminate between those graduates who were fitted to take up college work and those not so fitted. In general, any not so fitted, and yet desiring to enter the University, could make up deficiencies most expeditiously, and most economically, by further study in the school. The demand for examinations given by the University was slight and scattered, and as a result there was no very fixed and definite standard of admission through examination. Two classes of students were taking examinations: (1) Graduates of high schools who had fallen short of the school standard in a small number of subjects; (2) non-graduates who were trying a short cut and omitting one or two years of the high school course. Candidates of the first class usually came up for examination without additional preparation of a serious kind and took a chance in much the same way that they would approach any other scheme of lottery. Whether they passed or failed the University had very little more light on their capacity to do college work than was or could have

been given by the high school without the bother, expense, and, in many cases, keen disappointment of the candidates concerned. In other words, the question of admission on the high school record ought to be definitely settled one way or the other at the time of graduation. If unfavorable to admission, the further necessary preparation had better be supervised and tested by the secondary school, which is in the business, so to speak, and to which, in the agreed division of labor between the secondary school and the University, has been intrusted this stage of the educational process.

In the great majority of cases this is actually the fact at the present time. The school exercises discretion in the matter of recommendation, and, by express permission and invitation of the University, recommends candidates who fall below the fixed standard in one or more subjects, but whose general high record and intellectual qualities give promise of success in college. Since we are thus fully committed to the recommending system the August entrance examinations are, in these cases, simply a temptation, on the one hand, to high school principals to shift their just responsibility upon the University, and, on the other, to unprepared candidates to take a chance shot without further serious preparation. If it be understood that the high school graduate is not to be received by the University until the school is ready to certify to his admission, it will deepen the sense of responsibility in the school; it will have a wholesome effect upon the candidate and tend to make his school work more serious.

The short-cut candidates are, at the present time, a negligible quantity. The effect of discontinuing the August examinations will simply turn them to the examinations of the College Entrance Examination Board, a steadier, more impartial, and altogether more satisfactory test than our own entrance examinations. This Board will also furnish whatever supplement or alternative is needed to the recommendation system in irregular or special high school cases.

Statistics of the August entrance examinations of 1911 confirm the conclusions of the Committee. With a total entering class somewhat larger than in 1906, but 53 candidates presented themselves for entrance examinations; 34 of these have entered, but none wholly on examination. Twelve of these 34 had sufficient credit without further examination. Of the 19 not entering, 1 had sufficient units without examination but was kept out by the 500 limit, and 2 cases are still pending.

Forty of the 53 persons taking entrance examinations were presumably staking their admission on this throw. Of these 22 have been admitted, 16 rejected, and 2 are waiting for delayed credentials; 4 were candidates for admission as special students on the 5-unit plan; 2 succeeded and 2 failed. The 20 admitted in regular undergraduate standing were all high school graduates whose work in the high school had fallen below the fixed recommending grade in one or more subjects

and whose schools, for varying reasons, had not given full recommendations. But of these 20 only 14 actually met the test of examination. The other 6 were carried by the Committee in spite of deficiencies. In reality, then, (of candidates for regular standing) 14 succeeded and 20 failed.

Of the 20 admitted, 3 were from the Pasadena High School, 3 from Oahu College, 2 each from Palo Alto High School and Manzanita Hall, and 1 each from Stockton, Portland, Phoenix, Bakersfield, Santa Barbara, Duluth, Sacramento, and Lehi (Utah) High Schools, Occidental Academy, and the Manor School (Conn.).

The bearing of the proposed discontinuance of the August entrance examinations upon the 40 candidates submitting to the examination test would be about as follows:

In the case of the 20 admitted in regular undergraduate standing, with no examination test at Stanford, the high schools would have considered more carefully, and perhaps much earlier, the problem of recommendation. Some would have been recommended in full, some would have been refused full recommendation and a definite task prescribed. The candidate could still make trial of the College Entrance Examination Board in June; or failing this, could make his plans without the uncertainty, expense and delay of a journey to the University in August.

In the case of the 14 candidates rejected, it is possible that on further consideration by the high schools full recommendation in a few cases may have been granted. For the others it is possible that these tests had some educational value to the candidates. But these candidates were not material for whom special consideration should be made, and to some extent they were deflected by these tests from the proper channel of entrance preparation.

Examinations for sifting applicants for special standing have been of assistance to the Committee on Admission not particularly because of the results of these tests, but because so many of those looking for easy entrance have been frightened away by the existence of this test. Some good candidates have doubtless also been frightened away. The task of the Admissions Committee will be somewhat more difficult when the examination test is discontinued; but it is the conviction of the Committee that the gain in other directions will more than counterbalance this loss.

APPENDIX V

THE REPORT OF THE LIBRARIAN.

There were no large single purchases of books during the past year such as the Jarboe and Dudley collections acquired during 1910-11. Furthermore, a larger proportion of the orders, on account of the special appropriation for sets, are still outstanding. For these reasons the accessions for 1911-12 fall below those of last year. Following is the statement:

Volumes in Library August 1, 1911	162,432
Added by purchase	8,058
Added by gifts and exchange	1,795
Added by binding	3,035
	<hr/>
Total volumes added	12,888
Less volumes withdrawn	941
	<hr/>
Net increase	11,947
	<hr/>
Volumes at Stanford University July 31, 1912	174,379
Volumes in Lane Medical Library, San Francisco	31,422
	<hr/>
Total	205,801

The volumes withdrawn consisted largely of duplicate United States government publications which were returned to the Superintendent of Documents at Washington. The book fund subject to unit allotment was apportioned on virtually the same schedule which prevailed last year and which was printed in the President's Eighth Annual Report, therefore the apportionment is not here repeated. Of the volumes added by purchase, 732 were on the Syllabus fee account and 484 on the Law fee account. There were also added to the Law library 295 volumes by binding and 24 volumes by gift, making the total accessions to this department for the year 803 volumes.

Some of the more noteworthy purchases were: The Ellesmere Chaucer; Olschki's Monumental edition of Dante's *Divina Commedia*; Sabin's Dictionary of books relating to America; K. Akademie der Wissenschaften, Wien, Sitzungsberichte, and Denkschriften; Proceedings of the Philological Society of London; Publications of the Chaucer Society,

London; Bibliothèque de l'école pratique des hautes études; Revue des langues romanes; Revue critique d'histoire et de littérature; Journal de la Société de Statistique de Paris; Bibliothèque de l'école des chartes; Graefe's Archiv für ophthalmologie; Archives de neurologie; Archiv für hygiene; Vierteljahresschrift für öffentliche gesundheitsflege; Saccardo, Sylloge fungorum; Bulletin de la Société Royale de Botanique de Belgique; Bibliotheca botanica; Chemisches centralblatt; Indian engineering; Schweizerische bauzeitung; Journal de l'école polytechnique.

To Mr. Thomas Welton Stanford the Library is indebted for the generous gift of \$500 annually for a period of five years, to be expended for books on spiritism. From the Trustees of Cooper Medical College were received 411 volumes, being a part of the private library of the late Dr. Levi Cooper Lane. Mr. Herbert C. Hoover has increased our indebtedness to him by placing in the Library his collection of books on China and the Far East, numbering 326 volumes and 78 pamphlets. Mr. J. C. Cebrian gave a handsome work entitled "The history of the Spanish Christian architecture during the Middle Ages." President Jordan continues to be the source from which the Library derives many accessions. Timothy Hopkins and Horace Davis likewise are generous donors.

It becomes my duty to again report a regrettable number of resignations from the staff. Mr. Goodwin, the assistant librarian, resigned in January to assume the position of librarian of the University of Texas. Miss Rossiter, reference librarian, resigned in June to become librarian of Reed College, and Miss Thompson received a call to the Library of the University of Southern California. Miss Stinson resigned early in the year to be married, and the resignations of Miss Franklin, Miss Boulware and Miss Strachan followed at the end of the year from the same cause. Without counting student assistants, we are beginning the year with a staff of which one-third of the members are without previous experience in this library. Where experience counts for so much there must necessarily be a temporary loss of efficiency. The only compensating feature is the knowledge that members of our staff are held in such high esteem.

A considerable part of the work of the Library consists in acquiring needed material and making it available for use. What has been accomplished during the year is set forth in the following reports submitted to the librarian by those in charge of the respective library departments.

CLASSIFICATION.

Miss Hays, classifier, reports on the work of her department as follows: We have kept the current accessions and gift material up to date until June, and have done something in the struggle against back work since then. During August, 1911, some time was given to checking railroad material in aid of the proposed Bureau of Railway Economics checklist, and in December we arranged the H. R. L. unbound pamphlets. In

September the Dudley collection was finished, and in May the last of the Jarboe collection was sent through. In April we mounted our Bookplate collection and put it in shape for use, and began the monumental task of shelf-listing the British Sessional papers. This gradually developed into making a checklist as well, which will give a complete and consecutive record of the volumes of our set, however they may be bound, and whether complete or not. In this tremendous piece of work we were aided by some of the assistants at the Loan Desk during the Easter vacation and Miss Boulware and Miss Todd were very kind about giving their services whenever they were able. An extra assistant for the summer, Miss Burlingham, was appointed, and began her work May 21st. She has made one file of all of our Doctors' dissertations, comparing them with our Berlin cards, L. C. slips, and written slip catalogue, by no means a short or easy task. In addition she has been able to type lists as needed. The record of the books sent through is appended. It is not an exact measure of even the shelflist activity, for old cards are constantly re-written and cover slips made, but it is the best at command. In shelf-listing "Continuation" is considered a synonym for any added entry and includes extra copies, new editions as well as new volumes of sets and periodicals.

Month	NEW BOOKS		Continuations, incl. Bindery		OLD BOOKS		CHANGES		TOTAL	
	Titles	Vols.	Titles	Vols.	Titles	Vols.	Titles	Vols.	Titles	Vols.
Jul.	62	237	26	52	.....	.....	8	9	96	298
Aug.	360	755	198	269	.....	.....	4	6	562	1030
Sep.	438	549	129	354	48	65	23	63	638	1031
Oct.	329	614	252	379	44	55	32	43	657	1091
Nov.	496	665	217	362	47	64	6	11	766	1102
Dec.	263	347	62	77	31	41	52	66	408	531
Jan.	507	755	140	204	41	41	8	24	696	1024
Feb.	394	565	174	302	57	79	10	10	635	956
Mar.	438	722	324	720	47	99	11	22	820	1563
Apr.	356	600	145	194	51	61	6	13	558	868
May.	331	530	212	416	3	6	5	5	551	957
June.	62	216	115	163	91	91	2	2	270	472
	4036	6555	1994	3492	460	602	167	274	6657	10923

CATALOGUE DEPARTMENT

Miss Sutliff, Chief Cataloguer, submits the following:

The usual bad luck has followed the Catalogue department during the year 1911-12. The first semester started out quite auspiciously in spite of the fact that we had lost one first class assistant, Miss Franklin, by promotion, and had two new ones who were without any adequate training. Before Thanksgiving, however, our good days were over and for four months, illness claimed different members of the department nearly all the time. In spite of this, a satisfactory amount of work was done, each member of the staff striving more than was right to keep abreast of the work. I am especially pleased to note that the Jarboe library of French revolution literature consisting of 1619 titles was catalogued, and duplicate cards prepared for a bulletin which will be printed, I hope, some time during the present university year. I cannot too highly commend Miss Hall and Miss Thompson for their work in this cataloguing. The books and pamphlets offered unusual difficulties to the cataloguer, and these young ladies spared themselves no trouble in their efforts to solve them. The other members of the staff assisted in this work a little, but on them devolved the duty of taking care of the new books as they came in. Since April, however, these have been allowed to accumulate to certain extent in order that the Jarboe books might be finished. Thus the first of August found us with many books on our hands that ordinarily would be included in the report of the year.

Report in Detail.

New books catalogued.....	11,805
Old books catalogued.....	850
Continuations from Bindery.....	1,748
	<hr/>
Total,	14,403
Recatalogued	890
Total number of new cards filed in the catalogue.....	44,580
L. C. cards.....	18,126
A. L. A. cards.....	1,900
Harvard cards	55

Besides these, 3460 cards have been typed and arranged for the Jarboe bulletin, and about 100,000 slips have been added to the Library of Congress catalogue.

I ought to add that about 4000 cards have been received from the Berlin Library and a like number from the Harvard Library. These have been arranged and half of them filed with the L. C. slips. About 1000 of these will be added to our library catalogue, representing books or dissertations in our collections.

SERIAL DEPARTMENT.

Miss Brooks of the Serial department reports:

During the year 1911-12 the Serial department has received regularly 1175 publications and 18 daily newspapers. Of the periodicals 968 are purchases, 79 are new this year and 207 are gifts or exchanges. During the summer of 1912 all the files of unbound serials have been thoroughly sorted and recorded and a complete list of all material in the department will soon be in one alphabet. The efficient working of the department has been somewhat hampered by a new personnel and a second change in the assistant. The binding for the year has been as follows:

Books bound	409	} at a cost of \$2226.89
Books rebound	175	
Serials bound	1592	
Law books	83	at a cost of 86.75

LOAN DESK.

Since Mr. Goodwin's departure in January the work of the Loan Desk has been under the supervision of Mr. C. V. Park. He submits the following statement of the use of books during the year:

August	1,770
September	17,937
October	19,201
November	17,587
December	11,553
January	9,594
February	16,876
March	16,157
April	13,547
May	7,464
June	862
July	526

Total,	133,074
--------	---------

LANE MEDICAL LIBRARY.

Miss James, Medical librarian, reports additions to the Lane Medical Library as follows:

By purchase	365 volumes
By gift	466 volumes
By binding	965 volumes

Total,	1,796 volumes
--------	---------------

At the time of last year's report we were unable to make an accurate statement of the number of volumes in the Lane Library, for only about one-third of the books had been accessioned and much of the material consisted of unbound journals, many of which were incomplete. The numbering has been continued through all of the bound books, showing the contents of the library at the close of the year to aggregate 31,422 volumes. Allowing for the quantity of material still on hand in incomplete and unbound form the estimate last year of 35,000 volumes was not far from being correct. Additions have been made from time to time to the list of journals subscribed for, so that at present 239 are currently received. Of these 50 are American, 40 English, 57 French, 83 German and 9 various. Thirty-eight are devoted to the eye, ear and throat, being received on account of the Barkan Fund. Aside from the routine work a list has been prepared of the very considerable collection of duplicates, some of which have been sold while others have been transferred to the University Library at Stanford. A rough list also has been made of all books in the library other than periodicals for the purpose of ordering Library of Congress cards where available.

In the absence of an established exchange department the Library acts as the medium for the distribution of the University Series and for other publications sent to the libraries, learned societies and museums. During the year the following have been distributed:

Eighth annual report of the President of the University.

Register for 1911-12.

University Series:

Matzke memorial volume.

Boezinger: *Das historische Präsens in der älteren deutschen Sprache.*

Slonaker: The effect of a strictly vegetable diet on the spontaneous activity, the rate of growth, and the longevity of the Albino rat.

Searles: *Catalogue de tous les livres de feu M. Chapelain.*

During the year the library staff comprised George Thomas Clark, librarian; John Edward Goodwin, assistant librarian (resigned in January); Mary Jeannette Woodruff, stenographer; Alice Newman Hays, classifier; Helen Binninger Sutliff, chief cataloguer; Frances Sophia Courtenay James, medical librarian; Maida Rossiter, reference librarian; Charles V. Park, chief of loan desk (from January); May Franklin, chief of order department; Lucia May Brooks, chief of serial department; Elizabeth Hadden, cataloguer; Anna Gertrude Hall, cataloguer; Della Thompson, cataloguer; Jeannette Catherine Morgan, cataloguer; Laura Agnes Williamson, cataloguer; Mary Elvira Smith, assistant clas-

sifier; Lucretia Boulware, assistant in order department; Agnes Elizabeth Brown, assistant at loan desk; Walter Slack, assistant at loan desk (second semester); Harriet Hayes, assistant in serial department; Nina Strachan, reference assistant; Louise Ophüls, assistant in Lane Library; Jean Marcus, assistant in Lane Library (second semester); Hannah Lillian Todd, bindery assistant; Marguerite Brown, Thomas Lafayette Dyer, Talmadge Laughner Smith, Ollis Willard Newman, Joseph Paul Cottrell, LeRoy Edward Taylor, student assistants.

GEORGE THOMAS CLARK,
Librarian.

APPENDIX VI

APPOINTMENT SECRETARY.

During the year 1911-12 the total number of candidates registered for positions in the Office of the Appointment Secretary was 464. Of this number 107 were new registrations; 357 old (many with positions, but wishing to be transferred to more desirable ones).

The total number of requests for candidates (direct) was 348. Of this number 318 were for teaching and administrative positions; 30 were miscellaneous (social worker, stenographer, private secretary, bacteriologist, preceptress, solicitor, clerk, governess, matron, playground worker, janitor, and the like).

Full reports regarding appointments during the summer have not yet been made. Judging from previous years, when complete data are received, the number of appointments for the year will total 150 or 175.

The total number of requests for information concerning candidates from Teachers' Agencies was 56.

The total number of sets of credentials sent out regarding candidates was 528.

Requests for candidates have been received from California, Nevada, Arizona, Texas, Illinois, Washington, Oregon, Idaho, Colorado, Alaska, Hawaiian Islands, Philippine Islands, India (Calcutta) and South America.

The number of requests for men has been much larger in proportion to the number registered than for women. This is especially true in certain subjects—Mathematics, Physics, Chemistry, "General Science," Commercial Subjects and Manual Training.

There has been an increasing demand for teachers in Domestic Science and in Gymnastics and Athletics.

While in some subjects the number of candidates registered has considerably exceeded the demand, yet, as a rule, thoroughly trained, experienced candidates find little difficulty in securing desirable positions.

A large part of the time of the Appointment Secretary has been spent in consultation with students regarding vocations other than teaching and desirable combinations of subjects for high school work.

SUSAN BROWN BRISTOL,
Appointment Secretary.

APPENDIX VII

DEAN OF WOMEN.

The personal nature of the work of the Dean of Women allows but a part of it to appear in print.

All women entering the University for the first time were given personal interviews of the length necessary to assist them in the matters of room, board, and proper selection of University work. Twelve hours a week throughout the year were provided for consultations at the office, Room 203, and one afternoon and evening a week were devoted to students informally at home. Many hours have been given to student activities, to the establishment of student government, and to the working out of a plan for the management of Roble Hall, which plan was submitted by letter to the Board of Trustees. Considerable time has also been spent in investigating and regulating the conditions under which students are employed who are obliged to contribute to their support.

The problem of housing the women students has sometimes been acute. It has been the aim of the Dean of Women to reduce expenses upon the campus so as to enable as many as possible, preferably all those not living in their own homes, to reside in the neighborhood of the Quadrangle. In order to reduce expenses, coöperative clubs were formed at both 21 and 22 Lasuen Street, thus eliminating the profit of the boarding house keeper. When the new Delta Delta Delta Sorority house was completed, the third coöperative club secured the house vacated by that sorority and revived the old name of Mariposa. But all three of these clubs were obliged to hire from the first lessees of the University, paying exorbitant rents for the profit of those intermediate landlords under the guise of renting "furnished" houses. This abuse was finally terminated by the Business Manager of the University, who refused to renew such leases and leased directly to the coöperative clubs. As a result, more women are enabled to live upon the campus than ever before, and to live under better conditions; in fact, only those lived in Palo Alto who were engaged in remunerative work that necessitated their residence there.

A Student Loan Fund was established, the greater part of the work of raising the money being done by the Social Service Committee of the Young Women's Christian Association. The purpose was to loan small

sums to worthy young women at the discretion of the Dean of Women. Four students were so assisted last year.

Nothing has been so notable as the self-government of the women of the University. Under trying conditions at Roble Hall, it preserved order and maintained an ideal environment for study. The Women's Council has been willing to set standards and enforce discipline. Together with the Men's Council, they forbade the so-called dancing known as "ragging" which began to creep into University circles as it has into society at large. It is my belief that these Student Councils will keep unsullied the high standard of social life that exists at Stanford at the present time.

EVELYN WIGHT ALLAN,
Dean of Women.

APPENDIX VIII

STUDENT ADVISER.

The University Conference, an organization of upper classmen, in coöperation with the Faculty Student Affairs Committee and the Student Adviser has during the past three years been working out a system of student control. Through this organization the student body has been gradually assuming a greater degree of responsibility in matters of discipline and other matters of more general student interest. This work has been carried on for the purpose of training students in self-government and with the object of ultimately assuming complete control in such matters. During the spring semester the men of the University by a large majority voted to assume full responsibility in all matters of discipline and with the sanction of the President and the Faculty Student Affairs Committee complete student self-government was instituted. Under the system adopted a committee of five upper classmen chosen by the University Conference has assumed the duties and functions formerly exercised by the Faculty Committee on Student Affairs. Its decisions and recommendations must be approved by the President and the chairman of the faculty committee before they become effective.

Much time has been given by the Student Adviser to the development of this system of student control and to association with students in their various student activities.

Reports have been sent to parents who have inquired concerning the deportment and general progress of their sons.

Three hours daily have been given to personal consultation with students. Men who have fallen below the required scholarship standards have been interviewed with the object of discovering the reasons for their delinquencies and an effort has been made to assist such men in obtaining proper ideals of University work.

Conditions of student life are at a very high standard and the character and ability of the present leaders in the various lines of student activities insure a continuation of these conditions.

ALMON EUGENE ROTH,
Student Adviser.

APPENDIX IX

THE MEMORIAL CHURCH.

Matriculation.

A copy of the following letter was addressed to each Freshman entering the University:

Stanford University, Cal., September 1st, 1911.

To the Members of the Class of 1915:

As Chaplain of the University, I welcome you to a share in our religious life. We hope that the Memorial Church will soon be rebuilt; meanwhile religious services are held as follows:

Daily at 8 a. m., in the vestry of the Church, a simple devotional service, lasting fifteen minutes; students taking their part by reading the lessons and saying the prayers.

On Sunday at 11 a. m., in the old chapel, with sermons on alternate Sundays by distinguished preachers from various churches.

These services are undenominational in character, and attendance at college chapel will not interfere with your own church membership.

A matriculation service for Freshmen will be held in the chapel next Sunday, September 3rd, at 11 a. m. I trust you will be present.

In entering upon this strange and somewhat exciting life, I beg you be true to the moral principles and religious habits of your youth. Let nothing hinder your Christian life. Character is the supreme ideal of education, and religion is the most potent factor in character development. University life has its own temptations, its own hindrances; therefore, I say to you, Ally yourselves with every force in the University which makes for purity and godliness of living.

If at any time I can be of service to you, come, and I will gladly help or advise you. I keep office hours in the vestry daily, except Monday, from 9 to 12.

Praying God's blessing upon your new life, I am,
Sincerely yours,

D. CHARLES GARDNER.

At the Matriculation Service, Dr. Branner, Acting President, was present and appropriate addresses were made by the Chaplain and Student Adviser.

Chapel Services.

One hundred and sixty-eight services of Public Worship have been held during the year, with a total attendance of 9245.

On Sundays, first semester.....	4340	
Average, 289.		
On Sundays, second semester.....	2970	
Average, 198.		
Daily Chapel, first semester.....	871	
Average, 14.		
Daily Chapel, second semester.....	1064	9245
Average, 15.		
Baccalaureate Sunday.....	1700	

The attendance at the Daily Chapel service shows a gain of 323 for the year, and the Sunday Service a gain of 1767. The Chaplain preached on alternate Sunday mornings throughout the year, and made an address at the Daily Chapel service.

Acting under the authority of the Board of Trustees, the Chaplain invited the following named clergymen of various denominations to preach on alternate Sunday mornings:

First Semester.

Hebrew—Rabbi Meyer, San Francisco.
 Presbyterian—Rev. Robert Freeman, Pasadena.
 Unitarian—Rev. Bradford Leavitt, San Francisco.
 Methodist—Bishop Hughes, San Francisco.
 Dr. Hays, Chicago.
 Episcopalian—Bishop Nichols, San Francisco.
 Rev. C. F. Blaisdell, Redlands.

Second Semester.

Baptist—Rev. R. M. Vaughan, Berkeley.
 Congregational—Rev. A. W. Palmer, Oakland.
 Episcopalian—Dr. Clappett, San Francisco.
 Presbyterian—Dr. Day, San Anselmo.
 Methodist—Rev. W. C. Evans, San Francisco.
 Dr. Charles D. Hurry, New York.
 Unitarian—Dean Wilbur, Berkeley.

Teaching.

The Chaplain has given a course of lectures in the Department of Biblical Literature and History on the life and teaching of Jesus.

For voluntary groups of students and others he has given courses of

instruction in (1) St. Mark's Gospel, (2) St. Luke's Gospel, (3) Moral Philosophy.

Gradually we are building up a library in Biblical Literature, Ethics, Christian Philosophy and Apologetics. One function of the Chaplain is to guide students in their reading in these and kindred subjects.

Pastoral Work.

The most important part of the Chaplain's function is pastoral, and therefore private. Such work cannot be tabulated. I try to meet each freshman. I keep office hours, daily, except Monday, from 8:30 to 12; visit sororities and fraternities socially, and make addresses on morals and manners; call on students in halls and lodgings; care for sick and poor students; visit all students in hospital, and act as adviser to individuals and associations.

D. CHARLES GARDNER,
Chaplain.

APPENDIX X

LELAND STANFORD JUNIOR MUSEUM.

I have the honor to submit the following report upon the condition and operations of the Leland Stanford Junior Museum during the year ending July 31st, 1912.

The greater part of the work was confined to the care of the buildings and the collections, economical considerations having reduced the working force to the least possible number.

But few changes have been made within the past year, it being considered best to retain the present temporary installation of material until more definite plans for its future arrangement could be made.

The attendance during the year was exceptionally good, including many noted visitors from eastern and foreign points. School classes from many towns along the Peninsula repeatedly visited the Museum. They were accompanied by their teachers and instructors. Usually half the day would be devoted to seeing the exhibits, the other half being spent in looking through the University buildings.

A number of donations were made, including a collection of Japanese armor by Drs. Geo. W. and C. T. Rodolph, of Oakland. This collection contained some very unique as well as rare specimens.

HARRY C. PETERSON,
Curator.

APPENDIX XI

PUBLICATIONS OF THE FACULTY, 1911-12.

DAVID STARR JORDAN :

Bankers as peace guardians: *World To-Day*, vol. 21, February, 1912.
Concerning Sea-Power: (World Peace Foundation, Pamphlet series, January, 1912, no. 4, pt. 1.)

Idem: *The Independent*, vol. 71, July 6, 1911.

Confessions of a peace maker: *Friends' Intelligencer*, 20 Jan. 1912.

Descriptions of two new species of fishes from Honolulu, Hawaii: *U. S. National Museum Proceedings*, vol. 42, August, 1912.

Eric's book of beasts, done in water colors and accompanied with appropriate jingles; interpreted in black and white by Shimada Sekko. San Francisco, Elder, 1912.

Foreclosing the mortgage on war: *World's Work*; vol. 24, June, 1912.

The fur seals and their enemies (with G. A. Clark): *Review of Reviews*, vol. 45, March, 1912.

Great scientists' indictment of American universities: *Current Literature*, vol. 52, January, 1912.

A half century of Darwinism: *Science*, vol. 30, 15 Oct., 1909.

The heredity of Richard Roe; a discussion of the principles of eugenics. Boston, American Unitarian Association, 1912.

Japan and the United States: *Sunset*, vol. 28, January, 1912.

Idem: *Japan Weekly Mail*, vol. 57, no. 6, Supplement, February 10, 1912.

Japan's task in Korea: *Review of Reviews*, vol. 46, July, 1912.

Knowing real men. San Francisco, Whitaker & Ray-Wiggin Co., 1911.

Kokumin no Kotto (Blood of the Nation): Tokyo.

Krieg und Mannheit: Internationale Verständigung, Heft. 5, Berlin, 1912.

The material waste of war: *Sierra Educational News*, vol. 7, August, 1911.

Idem: *Altrurian*, vol. 1, October, 1911.

La Moisson Humaine. Traduit de l'Anglais par A. L. Guérard, Paris, 1911.

Moral training of college students. (Synopsis: *Proceedings of the National Education Association*, 1911.

Practical education. San Francisco, Whitaker & Ray-Wiggin Co., 1911.
 Relations of Japan and the United States: *Journal of Race Development*, vol. 2, January, 1912.

Idem: *Popular Science Monthly*, vol. 80, January, 1912.

Review of sciænoid fishes of Japan (with W. F. Thompson): *Proceedings of the National Museum*, vol. 39, 1911.

Review of Sparidæ and related families of perch-like fishes found in waters of Japan (with W. F. Thompson): *Proceedings of the U. S. National Museum*, vol. 41, January, 1912.

Robben und ihre beschützung (with G. A. Clark). Verhandlungen des VIII Internationalen Zoologen-Kongresses zu Graz, 1912.

Saving of time. San Francisco, Whitaker & Ray-Wiggin Co., 1911.

Syllabus of lectures on International Conciliation given at Stanford. Printed for class use January, 1912. Published by World Peace Foundation. Boston, 1912.

Temperance and society: *Proceedings of the National Education Association*, 1911.

Three counts against tobacco: *Prophylaxis*, 1, August, 1912.

Unseen empire. Boston. American Unitarian Association, 1912.

Idem: *Mid Pacific Magazine*, vol. 2, December, 1911.

William Russell Dudley: *Science*, n. s. vol. 34, 4 August, 1911.

GEORGE ARCHIBALD CLARK:

Commercial subjects in high schools: *Sierra Educational News*, vol. 7, September, 1911.

The fur seals and their enemies (with D. S. Jordan): *Review of Reviews*, vol. 45, March, 1912.

Pribilof fur seal herd: *Science*, n. s., vol. 35, March 1, 1912.

Report of the seal commission: *ibid.*, vol. 35, April 5, 1912.

Report on fur seal herd, 1909: *House Document No. 93, 62d Congress, First Session*, pp. 829-897.

Robben und ihre beschützung (with D. S. Jordan). Verhandlungen des VIII Internationalen Zoologen-Kongresses zu Graz, 1912.

Shorthand, its educational and practical value: *National Education Association Proceedings*, 1911.

GREEK.

AUGUSTUS TABER MURRAY:

Aratus and Theocritus: *Matzke Memorial Volume, University series*, 1911.

LATIN.

HENRY RUSHTON FAIRCLOUGH:

United Editors' Perpetual Encyclopedia, New York & Chicago. (Six articles).

A sojourn in Rome: *University Monthly*, (Toronto), February, 1912.

A sojourn in Rome: *Sequoia*, November, 1911.

Sanborn's Series of Latin Classics. Editor of

Terence: Hauton Timorumenos, ed. by Ballentine.

Daniel: Sight book in Latin.

JEFFERSON ELMORE:

On Juvenal Sat. I, 144: *American Journal of Philology*, vol. 33, 1912.

Some phases of Martial's literary attitude: *Matzke Memorial Volume, University series*, 1911.

BENJAMIN OLIVER FOSTER:

Laus Fumandi: *Classical Weekly*, vol. 5, October 28, 1911.

Note on Livy, Præfatio, 10: *Proceedings of the American Philological Association*, vol. 42, 1912.

Propertiana: *Matzke Memorial Volume, University series*, 1911.

Review of

Schultze, Römische Eligiker. 5te Auflage: *Classical Philology*, vol. 7, January, 1912.

GERMANIC LANGUAGES.

GEORGE HEMPL:

Early Etruscan inscriptions, Fabretti 2342-2346: *Matzke Memorial Volume, University series*, 1911.

KARL G. RENDTORFF:

Some aspects of religious life in modern Germany. [San Francisco, 1912].

Idem: *Pacific Unitarian*, vol. 20, January and March, 1912.

WILLIAM ALPHA COOPER:

Reviews of

Jacoby, Herder als Faust, *Modern Language Notes*, vol. 27, June, 1912;

Goethe's Dramatische Dichtungen II, *Nation*, vol. 93, September 7,

1911; Goethe's Prophyläen-ausgabe, *ibid.*, vol. 93, Oct. 18, 1911;

Briefwechsel zwischen Schiller und Goethe, ed. Gräf und Leitz-

mann, *ibid.*, vol. 94, April 25, 1912; Der Junge Goethe, ed. Morris,

ibid., vol. 94, May 2, 1912.

BRUNO BOEZINGER:

Das historische Präsens in der älteren deutschen Sprache: *L. S. J. U. Publications, University series*.

ROMANIC LANGUAGES.

OLIVER MARTIN JOHNSON:

Origin of the legend of Floirè and Blanchefflor: *Matzke Memorial Volume, University series*, 1911.

COLBERT SEARLES:

Commentary on verses 36-52 of the "Excuse à Ariste": *Matske Memorial Volume, University series*, 1911.

Jarboe collection of French revolutionary documents in the library of Leland Stanford Junior University: *Bibliographical Society of America; Bulletin*, vol. 3, July-October, 1911.

Editor of Corneille, *Le Cid*. New edition with notes: *International Modern Language series*. Boston, Ginn & Co., 1912.

Editor of Catalogue de tous les Livres de feu M. Chapelain. (Bibliothèque Nationale, Fonds Français, Nouv. Acq., No. 318): *L. S. J. U. Publications, University Series*, 1912.

CLIFFORD GILMORE ALLEN:

Relation of the German "Gregorius auf dem Stein" to the Old French poem "La vie de Saint Gregoire": *Matske Memorial Volume, University series*, 1911.

ALBERT LÉON GUÉRARD:

English as an International language: *Popular Science Monthly*, vol. 79, October, 1911.

Opportunities for literary training in the study of modern languages: *National Education Association Proceedings*, 1911.

AURELIO MACEDONIO ESPINOSA:

New Mexican Spanish folk lore. Part 3, Folk Tales: *Journal of American Folk Lore*, vol. 24, October-December, 1911.

Old French ne-se-non in other romance languages: *Matske Memorial Volume, University series*, 1911.

Studies in New Mexican Spanish, Part 2, Morphology: *Revue de Dialectologie Romane*, vol. 2, December, 1911; vol. 3, June, 1912.

Editor of Lopez de Ayala y Herrera, *Consuelo, Comedia*. New York, Holt, 1911.

ENGLISH LITERATURE AND RHETORIC.

MELVILLE BEST ANDERSON, Emeritus.

D'Annunzio as a National Poet: *Dial*, vol. 52, April 1, 1912.

Purgatorio XI: The Lord's Prayer; translated by Melville Best Anderson: *Matske Memorial Volume, University series*, 1911.

ALPHONSO GERALD NEWCOMER:

The labor of theme reading: *The English Journal*, vol. 1, April, 1912.

Last words of Shakespeare's characters: *Matske Memorial Volume, University series*, 1911.

Shakespeare in relief: *Dial*, vol. 53, August 1, 1912.

Note: Lines in Don Juan: *Nation*, vol. 93, August 31, 1911.

Reviews of

Shakespeare "Forgery" re-examined: *Dial*, vol. 52, January, 1912;
 Three centuries of Shakespeare literature, *ibid.*, vol. 51, September
 16, 1911; Communication on the same, *ibid.*, vol. 51, November, 1911;
 Wordsworth anatomized: *ibid.*, vol. 52, January 1, 1912.

LEE EMERSON BASSETT:

Teaching of poetry in the public schools; Part 2: *Western Journal of
 Education*, August, 1911.

WILLIAM DINSMORE BRIGGS:

Spenser's "Faerie Queene," III ii, and Baccaccio's "Fiammetta":
Matzke Memorial Volume, University series, 1911.
 Editor of Jonson, Ben. Sejanus. Boston, Heath, 1911.

VAN WYCK BROOKS:

Amiel: *Forum*, vol. 48, July, 1912.
 Maurice de Guérin: *ibid.*, vol. 47, May, 1912.

EDITH RONALD MIRRIELES:

The Shooting at Roeders: *McClure's Magazine*, vol. 39, June, 1912.
 The Stronger Force: *American Magazine*, vol. 73, March, 1912

ENGLISH PHILOLOGY.

EWALD FLÜGEL:

Benedicitee: *Matzke Memorial Volume, University series*, 1911.

PHILOSOPHY.

HENRY WALDGRAVE STUART:

Review of
 Philosophy and Religion, by Hastings Rashdall. *Philosophical Review*,
 vol. 21, January, 1912.

GEORGE HOLLAND SABINE:

Review of
 Some Problems of Philosophy, by William James. *International Jour-
 nal of Ethics*, vol. 22, January, 1912.

PSYCHOLOGY.

LILLIEN JANE MARTIN:

Memory versus imagination; an experimental critique. *Proceedings of
 the Psychological Association*, December, 1911.
 Die Projections methode und die Lokalisation visueller und anderer
 Vorstellungsbilder. *Zeitschrift für Psychologie*, Bd. 61, 1912.
 Ueber die Lokalisation der visuellen Bilder bei normalen und anormalen
 Personen: *Monatsschrift für Psychiatrie und Neurologie*. Bd. 31,
 1912.

Ueber die Lokalisation optischer Vorstellungsbilder: *Bericht über den V Kongress für Experimentelle Psychologie im Berlin*, 16-19 April, 1912.

EDUCATION.

ELLWOOD PATTERSON CUBBERLEY:

Does the present trend toward vocational education threaten liberal culture?: *Harvard Teachers' Association Proceedings; School Review*, vol. 19, September, 1911.

26 Articles on state school systems and state school administration: *Monroe's Cyclopedia of Education*, vol. II, 1911.

The improvement of rural schools: Houghton-Mifflin Co., Boston, 1912.

Rural school supervision: *The Ohio Teacher*, June-July, 1912.

PERCY ERWIN DAVIDSON:

Results and impressions of a preliminary study of pedagogical retardation: *Proceedings of the National Education Association*, 1911.

RUFUS CLARENCE BENTLEY:

Extra-classroom activities in high school; their place and their importance: *Proceedings of the National Education Association*, 1911.

LEWIS MADISON TERMAN:

Binet-Simon scale for measuring intelligence: *Psychological Clinic*, vol. 5, 15 December, 1911.

Binet-Simon scale for measuring intelligence. Impressions gained from its application upon 400 non-selected children: *Journal of Psycho-Asthenics*, 16 March, 1912.

Child study; its reason and promise: *Educator-Journal*, vol. 12, November, 1911.

Does your child stutter?: *Harper's Weekly*, vol. 56, May 18, 1912.

Medical inspection of schools: *Sierra Educational News*, vol. 8, March, 1912.

A new apostle of childhood: *Educator-Journal*, vol. 12, July, 1912.

Professional training for child hygiene: *Popular Science Monthly*, vol. 80, March, 1912.

School clinics for free medical and dental treatment: *Psychological Clinic*, vol. 5, February 15, 1912.

Tentative revision and extension of the Binet-Simon measuring scale of intelligence (with H. G. Childs): *Journal of Educational Psychology*, vol. 3, February-May, 1912.

HISTORY.

EPHRAIM DOUGLASS ADAMS:

British correspondence concerning Texas, Pt. 1-3; edited by E. D. Adams: *Southwestern Historical Quarterly*, January, April, July, 1912.

Lord Ashburton and the Treaty of Washington: *American Historical Review*, vol. 17, July, 1912.

Reviews of

Bruce, Broad Stream of Empire, *Annals of the American Academy of Political and Social Science*, vol. 38, September, 1911; Fisher, End of the Irish Parliament, *American Historical Review*, vol. 17, January, 1912; Maxwell, Century of Empire, *ibid.*, vol. 17, October, 1911; Rose, William Pitt and National Revival, *ibid.*, vol. 17, October, 1911; "Conclusion of a Great Work" (Cambridge History), vol. 12, *Dial*, vol. 51, August 1, 1911; C. F. Adams, Studies military and diplomatic, *ibid.*, vol. 52, April 1, 1912.

EDWARD BENJAMIN KREHBIEL:

Luchaire; Social France at the time of Philip Augustus. Authorized translation from the French by E. B. Krehbiel. N. Y., Holt, 1912. Proposed arbitration treaties defended: *San Jose Mercury*, December 10, 1911.

Syllabus of lectures on International Conciliation given at L. S. J. U. (with D. S. Jordan). Printed for class use, January, 1912. Published by World Peace Foundation, Boston, 1912.

War on The Hague, n. p., 1911. (Reprinted from *San Francisco Evening Bulletin*, December, 1911).

Reviews

Dobiache-Rojdestvensky, La vie paroissiale en France au XIII siècle d'après les actes episcopaux, *American Historical Review*, vol. 17, January, 1912; Perris, Short History of Peace and War, *ibid.*, vol. 17, April, 1912; Vincent, Historical Research; an Outline of Theory and Practice, *ibid.*, vol. 17, July, 1912; Novalevsky, "La France Economique et Sociale à la Veille de la Revolution," *American Journal of Sociology*, vol. 17, January, 1912.

HENRY LEWIN CANNON:

New age: *History Teacher's Magazine*, vol. 3, February, 1912.

Editor of Periodical Literature: *History Teacher's Magazine*, vol. 2-3, October, 1911

PAYSON JACKSON TREAT:

Constitution making in China: *Journal of Race Development*, vol. 2, October, 1911.

Reviews

Ross, The Changing Chinese, *Dial*, vol. 51, November 16, 1911; half a dozen books on China, *ibid.*, vol. 52, February, 1912.

ECONOMICS.

ALVIN SAUNDERS JOHNSON:

Expansion of military expenditure: American Association for International Conciliation, 1911.

HARRY ALVIN MILLIS:

East Indian Immigration to the Pacific Coast: *Survey*, vol. 28, June 1, 1912.

IRA BROWN CROSS:

The essentials of Socialism. New York, Macmillan, 1912.

Cooperation in California: *American Economic Review*, September, 1911.

Labor movement in California: *International Typographical Union Publications*, August, 1911.

Second western court on women's eight-hour law: *The Survey*, vol. 25, June 15, 1912.

Reviews of

Abbott, Spirit of Democracy, *Annals of the American Academy of Political and Social Science*, vol. 38, September, 1911; Webb, History of Trade Unionism, *ibid.*, vol. 38, November, 1911; Spargo, Side-lights on Contemporary Socialism, *ibid.*, Macdonald, Socialist Movement, *ibid.*, Mallock, Nation as a Business Firm, *ibid.*, vol. 38, January, 1912; 10th Annual Report on Strikes and Lockouts, *Quarterly Publications of the American Statistical Association*, vol. 12, September, 1911.

M. LIPPITT LARKIN:

Butter market: *Journal of Political Economy*, vol. 20, March, 1912.

LAW.

CHARLES HENRY HUBERICH:

Editor-in-chief of Commercial Law of the United States. 2v. Lond. & Boston. Boston Book Co.

Commercial and Maritime Law of Fiji. (Accompanied by a German translation). Berlin. R. v. Decker's Verlag.

Commercial Law of Hong Kong and Weihaiwei. (Accompanied by a German translation). Berlin. R. v. Decker's Verlag.

Commercial Law of Ceylon. (Accompanied by a German translation). Berlin. R. v. Decker's Verlag.

Commercial Law of Australia and New Zealand. Lond. Sweet & Maxwell.

Handelsgesetze von Australia und Neu Seeland. Berlin. R. v. Decker's Verlag.

Die Chinesische Partnership. Ordonnanz von Hong Kong. Monatschrift für Handelsrecht, vol. 21, no. 5.

Kinematographische Vorstellungen als Verletzungen des Urheberrechts: *Deutsche Juristen Zeitung*, January 15, 1912.

Idem: *Der Kinematograph*, 24 Jan., 1912.

Moving pictures as a violation of dramatic copyright: *Bioscope*, February 1, 1912.

Das neue Zolltarifgesetz von Zanzibar: *Deutsche Export Revue*, April 12, 1912.

Neue Handelsgesetze vor Mauritius: *Der Export Handel*, Hamburg 8th May, 1912.

General Introduction to the American Edition of the Commercial Laws of the World. Boston, Boston Book Co.

HOWARD LESLIE SMITH:

Direct Legislation in California: *Nation*, vol. 93, December, 1911.

APPLIED MATHEMATICS.

LEANDER MILLER HOSKINS:

Theoretical Mechanics; an Elementary Text Book. 4th ed. Stanford University Bookstore, 1911.

WILLIAM ALBERT MANNING:

On the limit of the degree of primitive groups: *American Mathematical Society; Transactions*, vol. 12, October, 1911.

ERNEST WILLIAM PONZER:

Note on the preparation of college freshmen in elementary algebra: *School Science and Mathematics*, vol. 11, November, 1911.

On the teaching of mathematics to freshmen engineering students: *ibid.*, vol. 12, 1912.

Reviews

Siddons & Vasall, Practical Measurements, *Bulletin American Mathematical Society*, vol. 18, December, 1911; Timerding, Die Mathematik in den physikalischen Lehrbüchern, *ibid.*, vol. 18, December 7, 1911.

PHYSICS.

FERNANDO SANFORD:

Pressure-shift of spectral lines: *Astrophysical Journal*, vol. 35, January, 1912.

The significance of the periodic law: *Journal of the American Chemical Society*, vol. 33, August, 1911.

JOSEPH GRANT BROWN:

New records of sound waves from a vibrating flame: *Physical Review*, vol. 33, no. 5, November, 1911.

PERLEY ASON ROSS:

Current produced by light in a metallic film: *Physical Review*, vol. 34, January, 1912.

The refractive index of metals: *Physical Review*, vol. 33, December, 1911.

BOTANY.

DOUGLAS HOUGHTON CAMPBELL:

The distribution of plants in North America: *American Naturalist*, vol. 46, March, 1912.

Plant Life and Evolution. New York, Holt, 1911.

GEORGE JAMES PEIRCE:

Civilization and Vegetation: *Popular Science Monthly*, vol. 79, October, 1911.

The liberation of heat in respiration: *Botanical Gazette*, vol. 53, February, 1912.

The opportunity of the endowed college: *Science*, n. s., vol. 35, June, 1912.

LEROY ABRAMS:

The Monardellas of Southern California 1-2: *Muhlenburgia*, vol. 8, March-April, 1912.

A new California Ceanothus: *Botanical Gazette*, vol. 53, January, 1912.

JOSEPHINE RANDALL:

Asterophila, a new genus of parasitic gastropods (with Harold Heath): *Biological Bulletin*, vol. 22, January, 1912.

PHYSIOLOGY AND HISTOLOGY.

FRANK MACE MACFARLAND:

The nudibranch family Dironidæ: *Zoologische Jahrbücher Supplement*, 15, Bd. 1, 1912.

The kelps of the Central Californian coast: *Fertilizer Resources of the United States*; Appendix M.; Senate Document, no. 190, 62d Congress, Session 2, 1912.

JAMES ROLLIN SLONAKER:

Effect of a strictly vegetable diet on the spontaneous activity, rate of growth, and the longevity of the albino rat: *Leland Stanford Junior University Publications, University series*.

Normal activity of the albino rat from birth to natural death, its rate of growth and the duration of life: *Journal of Animal Behavior*, vol. 2, January-February, 1912.

FRANK WALTER WEYMOUTH:

Observations on the habits of the crustacean *Emerita analoga*: *Smithsonian Institution; Miscellaneous Collections*, vol. 59, no. 7, 1912.

ZOOLOGY.

CHARLES HENRY GILBERT:

New cyclogasterid fishes from Japan (with C. V. Burke): *U. S. National Museum Proceedings*, vol. 42, 1912.

Fishes from Bering Sea and Kamchatka: *U. S. Bureau of Fisheries Bulletin*, vol. 30, 1910, issued 1912.

HAROLD HEATH:

The development of gonad and gonoducts in two species of chitons (with R. M. Higley): *Biological Bulletin*, vol. 22, January, 1912.

Asterophila, a new genus of parasitic gastropods (with Josephine Randall): *Biological Bulletin*, vol. 22, January, 1912.

Special investigation of the Alaska fur seal rookeries 1910: *U. S. Bureau of Fisheries Document* no. 748.

Spengelomenia, a new genus of solenogastres: *Zoologische Jahrbücher Supplement* 15, Bd. 1, 1912.

JOHN OTTERBEIN SNYDER:

The fishes of Okinawa: *U. S. National Museum Proceedings*, vol. 42, 1912.

EDWIN CHAPIN STARKS:

Posterior communication of the air-bladder with the exterior in fishes: *Science*, n. s., vol. 34, October, 1911.

ENTOMOLOGY AND BIONOMICS.

VERNON LYMAN KELLOGG:

Beyond War: New York, Holt, 1912.

Collecting on a Coral Reef: *Popular Science Monthly*, vol. 80, January, 1912.

Present day conception and study of animal psychology: *American Naturalist*, vol. 45, September, 1911.

Eugenics and militarism in problems in eugenics: *Papers Communicated to the 1st International Eugenics Congress*, London, July, 1912.

Samuel Butler and biological memory: *Science*, vol. 35, May 17, 1912.

Mallophaga from the islands of Lower California (with W. H. Mann): *Entomological News*, vol. 23, February, 1912.

A third collection of mallophaga from Alaskan birds (with W. M. Mann): *Entomological News*, vol. 23, January, 1912.

Reviews of

"Bibliographia Evolutionis," issued by Bulletin Scientifique de la France et de Belgique, Useful Evolution Bibliography: *American Naturalist*, vol. 45, September, 1911; Crampton, Doctrine of Evolution, *ibid.*, vol. 45, December, 1911.

RENNIE WILBUR DOANE:

An annotated list of the literature on insects and diseases for the year 1911: *Journal of Economic Entomology*, vol. 4, June, 1912.

New western Tipula: *Annals of the Entomological Society of America*, vol. 5, 1912.

GEOLOGY AND MINING.

JOHN CASPER BRANNER:

The geography of northeastern Bahia: *Geographical Journal*, vol. 38, August and September, 1911.

Earthquakes in Brazil: *Bulletin of the Seismological Society of America*, vol. 2, June, 1912.

A hydrocarbon found in the diamond and carbonado district of Bahia, Brazil: *American Journal of Science*, vol. 183, January, 1912.

An early discovery of Fullers' earth in Arkansas: *Bulletin of the American Institute of Mining Engineers*, New York, July, 1912.

Syllabus of a course of lectures on elementary geology: Fourth Edition, Stanford University, 1912.

Lisboa: Eugen Hussak, translated from the Portuguese by J. C. Branner: *Journal do Commercio*, Rio Janeiro, October 7, 1911.

Reviews of

Seismological Literature and Notes of Seismology: *Bulletin of the Seismological Society of America*, vols. 1 and 2.

JAMES PERRIN SMITH:

Ancient portals of the earth: *Popular Science Monthly*, vol. 80, April, 1912.

Distribution of lower triassic faunas: *Journal of Geology*, vol. 20, January, 1912.

NOAH FIELDS DRAKE:

Destructive earthquakes in China: *Bulletin of the Seismological Society of America*, vol. 2, March, 1912.

AUSTIN FLINT ROGERS:

Introduction to the Study of Minerals; a combined text book and pocket manual: New York, McGraw-Hill Book Co., 1912.

Baddeleyite from Montana: *American Journal of Science*, vol. 33, January, 1912.

Dahllite (podolite) from Tonapah, Nevada; voelckerite, a new basic calcium phosphate; remarks on the chemical composition of apatite and phosphate rocks: *ibid.*, vol. 33, May, 1912.

Lorandite from the Rambler mine, Wyoming: *ibid.*, vol. 33, February, 1912.

Notes on rare minerals from California: *School of Mines Quarterly* (Columbia), vol. 33, July, 1912.

The occurrence and origin of gypsum and anhydrite at the Ludwig mine, Lyon County, Nevada: *Economic Geology*, vol. 7, March, 1912.

Orthoclase bearing veins from Rawhide, Nevada, and Weehawken, New Jersey: *ibid.*, vol. 6, December, 1911.

On corundum-syenite (uralose) from Montana: *Journal of Geology*, vol. 19, November-December, 1911.

The validity of the law of rational indices and the analogy between the fundamental laws of chemistry and crystallography: *Proceedings of the American Philosophical Society*, vol. 51, April-June, 1912.

ELECTRICAL ENGINEERING.

HARRIS JOSEPH RYAN:

Polarity in polyphase current circuits: *Journal of Electricity, Power and Gas*, vol. 27, November, 1911.

MEDICINE.

RAY LYMAN WILBUR:

Abnormal body temperatures in injuries of the cervical spinal cord: *California State Journal of Medicine*, October, 1911.

Significance of pelvic pain: *ibid.*, December, 1911.

Should there be two degrees in Medicine?: *Bulletin of the American Academy of Medicine*, vol. 12, December, 1911.

Some relations of the nervous mechanism of the heart to drug effects as indicated by experiments on the terrapin: *Journal of the American Medical Association*, vol. 47, December 23, 1911.

Urobilin; its clinical significance (with Thomas Addis): *Journal of the Medical Association*, vol. 58, June, 1912.

HANS ZINSSER:

On albuminolysins and their relation to precipitin reactions: *Journal of Experimental Medicine*, vol. 15, May 1, 1912.

A contribution to the study of rat leprosy: *Journal of the American Medical Association*, March, 1912.

LANGLEY PORTER:

Pyloric obstructions in infants with muscular hypertrophy at the pylorus (with W. B. Lewitt): *Journal of the American Medical Association*, vol. 58, January 27, 1912.

Some points to be considered in feeding infants: *California State Journal of Medicine*, November, 1911.

THOMAS ADDIS:

Urobilin; its clinical significance (with R. L. Wilbur): *Journal of the American Medical Association*, vol. 58, June, 1912.

EMANUEL CHARLES FLEISCHNER:

The relation of meat ingestion and indicanuria in children: *American Journal of Diseases of Children*, vol. 2, October, 1911.

Report of the committee for the study of anterior polyomyelitis in San Francisco: *California State Journal of Medicine*, October, 1911.

Treatment of tic in childhood: *California State Journal of Medicine*, September, 1911.

GEORGE BURBANK SOMERS:

Uterovaginal prolapse in elderly women; technic of operation: *Journal of the American Medical Association*, vol. 58, June 22, 1912.

WILLIAM OPHÜLS:

Experimental nephritis in guinea pigs by subcutaneous injections of chromatis: *Proceedings of the Society for Experimental Biology and Medicine*, vol. 9, 1911.

Experimental nephritis in rabbits by subcutaneous injections of chromatis: *ibid.*, vol. 9, 1911.

Spontaneous nephritis in wild rats (with G. W. McCoy): *Journal of Medical Research*, vol. 26, 1912.

Subacute and chronic nephritis, as found in 1,000 unselected necropsies: *Archives of Internal Medicine*, vol. 58, 1912.

The relation of research to teaching in medical schools: *Journal of the American Medical Association*, vol. 58, February 24, 1912.

Some remarks on the mode of infection and of dissemination of tuberculosis in man, based on anatomical research: *National Association for the Study of Tuberculosis; Transactions of the 7th meeting*, 1912.

ERNEST CHARLES DICKSON:

A further report on the production of experimental chronic nephritis in animals by the administration of uranium nitrate: *Archives of Internal Medicine*, vol. 9, May, 1912.

ALBERT CORNELIUS CRAWFORD:

The pressor action of an American mistletoe: *American Medical Association Journal*, vol. 57, 9 Sept., 1911.

ADOLPH BARKAN, Emeritus:

Rückblicke und ausblicke *Wiener Klinischen Wochenschrift*, nr. 27, 1912.

STANLEY STILLMAN:

The treatment of the defect occasioned by partial excision of the inferior maxilla: *Annals of Surgery*, vol. 37, July, 1912.

Lymph angiomas of the omentum and omental cysts: *Journal of the American Medical Association*, vol. 57, 26 August, 1911.

Leland Stanford Junior University Publications
1913 Trustees' Series NO. 23

Annual Report of the President
of the University
for the Twenty-second Academic Year
ending July 31, 1913
being the tenth report submitted

Stanford University, California
Published by the University
1913

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS

TRUSTEES' SERIES

NO.	DATE
1. The Leland Stanford Junior University. A pamphlet of information.....	(No date)
2. Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3. Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4. Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5. Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6. Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees.....	April 25, 1903
7. Petition filed in proceedings to establish and construe University Trusts.....	June 16, 1903
8. Decree in proceeding to establish and construe University Trusts	July 3, 1903
9. Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees.....	July 6, 1903
10. Organization of the Faculty of the University.....	March 31, 1904
11. Report of the Organization Committee of the Trustees upon the Organization of the University Faculty	March 31, 1904
12. First Annual Report of the President.....	December 31, 1905
13. Second Annual Report of the President.....	April 30, 1906
14. Third Annual Report of the President.....	December 31, 1906
15. Fourth Annual Report of the President.....	December 31, 1907
16. Trustees' Manual	November 1, 1908
17. Fifth Annual Report of the President.....	December 31, 1908
18. Sixth Annual Report of the President.....	December 31, 1909
19. Seventh Annual Report of the President.....	December 31, 1910
20. Eighth Annual Report of the President.....	December 31, 1911
21. Ninth Annual Report of the President.....	December 31, 1912
22. Addresses of Timothy Hopkins, Emmet Rixford and David Starr Jordan at Dedication of Lane Medical Library.....	January 1, 1913
23. Tenth Annual Report of the President.....	July 31, 1913

TABLE OF CONTENTS

PRESIDENT'S REPORT

	PAGE
Standards Maintained	7
Student Control Successful	7
The Medical Department	7
Lane Medical Library	8
Cooper Medical College Transfer	8
New Trustees	8
Building Operations	9
West Lectures	9
Death of Professor Howard	9
Death of Professor Charters	10
Faculty Changes	10
Professorship of Comparative Literature	11
New Professor in Law	12
Administrative Changes	13
Fellowships and Scholarships	16
Instructorship in Japanese History	16
Gifts	16

APPENDICES

I. Departmental Reports:

Greek	20
Latin	21
German	22
Romanic Languages	23
English Literature and Rhetoric	25
English Philology	26
Philosophy	27
Psychology	27
Psychical Research	28
Education	29
History	30
Economics	32
Law	33
Graphic Art	34

6622 add
.25

Departmental Reports—Continued.

Mathematics	35
Applied Mathematics	35
Chemistry	36
Physics	39
Botany	40
Physiology and Histology	42
Physical Training and Personal Hygiene	43
Encina Gymnasium	43
Roble Gymnasium	44
Zoology	45
Entomology and Bionomics	46
Geology and Mining	47
Civil Engineering	49
Mechanical Engineering	50
Electrical Engineering	52
Medicine	54
Anatomy	56
Bacteriology	57
Medicine	58
Obstetrics and Gynecology	60
Pathology	60
Pharmacology	61
Surgery	62
Lane Hospital	63
The Marine Biological Laboratory	66
II. Reports of Committees:	
Student Affairs	67
Delinquent Scholarship	69
III. Report of the Registrar:	
Statistics of Registration	70
Average Age of Matriculation	70
Age of Freshmen at Matriculation	70
Statistics of Entering Class	71
Comparative Numbers at Matriculation	71
Classification by Major Subjects	72
Distribution of Entering Class	73
Registration of Studies	76
Petitions before Committee on Registration	76
Statistics of Graduation	77
IV. The Faculty:	
Credit for Gymnasium Work and Music	79
Vocational Guidance	79
Training of Teachers	80
Standing Regulations	80

Report of the President

5

V. Report of the Librarian	81
Cataloguing and Classification	82
Serial Department	84
Loan Department	84
Reference Department	86
Lane Medical Library	87
Summary for the Year	88
VI. Appointment Secretary	89
VII. Dean of Women	90
VIII. Student Adviser	91
IX. The Memorial Church	92
X. Leland Stanford Junior Museum	95
XI. Publications of the Faculty	96

REPORT OF THE PRESIDENT

TO THE HONORABLE BOARD OF TRUSTEES:
LELAND STANFORD JUNIOR UNIVERSITY.

Gentlemen:

Permit me to make the following report of the work of the University for the academic year ending July 31, 1913.

The work of instruction for the year has been carried on in a most satisfactory manner, and the character and ideals of the student body have never reached a higher plane.

Standards
Maintained The attitude toward study and morals is plainly the resultant average of the individuals composing the student body. Each year confirms the wisdom of the policy of exclusion from the University of idle or dissipated young men.

The policy of student control of university discipline, accepted last year, has been thus far unqualifiedly successful. The young men and women have risen to the trust confided to them. A large factor in the success of this movement for self-government has been the work of the Student Adviser of men, Mr. Karl Ludwig Schaupp.

This year has marked the full establishment of the Medical Department and the graduation of its first class, numbering seven students. The department has made a satisfactory growth, the total registration numbering fifty-three.

The Medical
Department Beginning with the new academic year the work of the division of Pharmacology will be transferred to the city. The laboratories of Anatomy and Bacteriology will remain at Palo Alto, and these two divisions have been constituted independent departments in the University, bearing the same relation to the Department of Medicine that Chemistry and Physiology do.

This year has also seen the completion and occupancy of the new Lane Medical Library. This building was erected in San Francisco at a cost of approximately \$150,000, and houses in a convenient and accessible manner the collection of 40,000 volumes composing the medical library. The building was dedicated with suitable exercises on November 3, 1912.

**Lane
Medical
Library**

The final transfer of the Cooper Medical College and Lane Hospital properties, which constituted then the Medical Department of the University, was accomplished and reported to the Board of Trustees on August 1, 1912. In recognition of the admirable spirit in which the directors and faculty of the College have conducted the negotiations leading to this transfer, and in recognition of their efforts to raise and maintain the standards of medical education on the Pacific Coast, the following resolutions were adopted by the Board, which should be here recorded:

**Cooper
Medical
College
Transfer**

Whereas, On the first day of July, 1912, Cooper Medical College and Lane Hospital did, by agreements previously made, pass from the control of the Directors of Cooper Medical College to the Trustees of Stanford University; and

Whereas, All the negotiations between the Trustees and the Directors attending the transfer of the properties and the assumption by the Trustees of the obligations belonging thereto have been most harmonious and satisfactory; and

Whereas, The Directors have shown the utmost reliance on the good faith of the Trustees;

Now, therefore, be it resolved, That this Board desires to express to the former Directors of Cooper Medical College its appreciation of their broad-minded action in all the transactions between the two bodies; and

Be it further resolved, That the Secretary of the Board be instructed to transmit to the Directors a copy of this minute and resolution.

At a special meeting of the Board of Trustees, on November 29, 1912, Mr. Herbert Clark Hoover, an alumnus of the University, class of 1895, was elected to fill the vacancy in the Board created by the death of Hon. Whitelaw Reid; and Mr. William Mayo Newhall of San Francisco, to fill the vacancy created by the expiration

**New
Trustees**

of the term of Mr. George E. Crothers. Mr. Hoover is consulting engineer and director in various important mining companies in London. Mr. Newhall is a capitalist of San Francisco. These elections are for the customary term of ten years.

The work of restoring the Memorial Church has made good progress, and it is expected that the building will be ready for use in the fall. The new building erected for the central heating and lighting plant has been occupied, and the removal of this plant to its new quarters has left room, with certain additions which have been made, for the housing of the new hydraulic and testing laboratories in the Department of Civil Engineering. The equipment of these laboratories, which is also provided for, will greatly strengthen the work of the engineering departments.

The second series of lectures under the West Memorial Foundation were given, April 22 and 23, by Dr. Samuel McChord Crothers of the First Unitarian Church, Cambridge, Massachusetts. These lectures will be published in book form by the press of Houghton, Mifflin Company, of Boston.

During the past year the University Faculty has sustained a severe loss in the untimely death of two of its members. On July 10, 1913, Dr. Burt Estes Howard, Professor of Political Economy, died in Los Angeles. The following is a brief sketch of his life:

Dr. Howard was born in Clayton, New York, February 23, 1862. In 1883 he received his A. B. degree from Western Reserve University, going from there to Lane Theological Seminary in Cincinnati. After studying there three years he was ordained to the ministry, and in the next twelve years he served successively as pastor of the First Presbyterian churches at Bay City, Michigan; Cleveland, Ohio; and Los Angeles, California. In 1898 he left the ranks of Presbyterianism and organized an independent church called the Church of the Covenant, preaching in the Los Angeles Theater. As pastor of this church he found much opportunity for civic work, was president of the Municipal League, and took an active part in the campaign for a non-partisan school board, which was the beginning of the reform movement in politics in that city.

In 1899 Dr. Howard went to Harvard for a year of study, returning at the end of that time to teach Political Science at Stanford University.

**Death of
Professor
Howard**

In 1902 he went to Heidelberg for study, receiving his degree of Doctor of Philosophy in 1903. The next two years were passed in study at Berlin University. Upon his return to this country he served for three years as pastor of the First Unitarian Church of Los Angeles, coming to Stanford in the year 1908 as Professor of Political Science, which position he held until the time of his death.

Dr. Howard was a frequent contributor to learned publications and encyclopedias, as well as the author of several books. He is survived by his wife, two sons and a daughter.

On December 30, 1912, Mr. Samuel Barclay Charters, assistant professor of Electrical Engineering in the University,

**Death of
Professor
Charters**

died in the city of Pittsburg, where he was spending the year on sabbatical leave, engaged in practical work as engineer inspector for the Bureau of Los Angeles Aqueduct Power. The following

is a brief sketch of his life:

Samuel Barclay Charters, Jr., was born in Pittsburg on January 1, 1881. He was prepared for college in the public schools of his native city, and entered the Department of Electrical Engineering at Cornell University in the fall of 1900, whence he was graduated in June, 1904. He was employed in the Engineering Department of the Westinghouse Electric and Manufacturing Company from July 1, 1904, to July 1, 1905; made Instructor in Electrical Engineering in Leland Stanford Junior University in September, 1905, and promoted to an assistant professorship at Stanford in 1907.

In the absence of Professor Ryan, Professor Charters was made acting head of his department for the year 1911-12. During this year, also, he served as Chairman of the San Francisco Section of the American Institute of Electrical Engineers. He was married in 1906 and is survived by his wife and a son, three years old.

Professor Charter's death was a great shock to all who knew him. He was an inspiring teacher, much beloved by his students because of his patience, integrity, ability and practical spirit.

In the Faculty of the University the following changes have taken place during the year:

In Greek: Professor Augustus Taber Murray has been granted leave of absence to enable him to complete the translation of the Odyssey for the Loeb Classical Library.

**Faculty
Changes**

In Romanic Languages: Associate Professor Oliver Martin Johnston has been made full professor; Assistant

Professors Albert Léon Guérard and Clifford Gilmore Allen, associate professors. Mr. Guérard has been granted leave of absence for the coming year, to fill a professorship of Romanic Languages in Rice Institute at Houston, Texas. Mr. Louis P. de Vries, a graduate of the University of Wisconsin, has been appointed instructor in his place.

In Germanic Languages: Assistant Professor Bruno Boezinger has been absent on sabbatical leave, his place being filled by Mr. Friedrich A. Wyneken as instructor. The latter will continue as instructor for the coming year in the absence of Assistant Professor Hilmer on sabbatical leave.

In English: Professor William Herbert Carruth, of the University of Kansas, has been elected to the chair of **Professorship of Comparative Literature**, and will be executive head of the department. Professor Alphonso G. Newcomer has been absent on sabbatical leave during the second semester, and Assistant Professors Lee Emerson Bassett and William Dinsmore Briggs, for the full year. Mr. Bassett has been made associate professor. Assistant Professor Briggs and Instructor Van Wyck Brooks have been granted leave for the year 1913-14.

In Philosophy: Professor Henry Walgrave Stuart has been granted sabbatical leave. Professor Warner Fite of the University of Indiana will be acting professor during the first semester. Assistant Professor George Holland Sabine has been made associate professor.

In Education: Associate Professor Percy E. Davidson will be absent for the first semester of the coming year on sabbatical leave.

In History: Professor Ephraim Douglass Adams has been absent on sabbatical leave during the second semester. For the coming year Mr. Yamato Ichihashi, a graduate of the University, will be instructor in Japanese history and government.

In Economics: Instructors Stephen Ivan Miller and Donald Frederic Grass have been made assistant professors. Assistant Professor Ira B. Cross has been granted leave of absence for the coming year to serve as secretary to the Industrial Accident

Board of the State of California. To fill the position left vacant by the death of Professor Howard, Mr. Victor J. West, a graduate of the University of Chicago and instructor in Political Science at Northwestern University for the past three years, has been appointed assistant professor.

In Law: Judge Emlin McClain, former chief justice of the supreme court of Iowa, after serving as acting professor during the second semester, has been appointed professor of Law.

New Professor in Law Professor Charles Andrews Huston has been absent during the year on sabbatical leave. Professor Frederic Campbell Woodward has been granted similar leave for the first semester of next year, and Professor Joseph Walter Bingham for the second.

In Graphic Art: Assistant Professor Robert Bartholow Harshe has resigned to accept a position in the art work of the Panama-Pacific Exposition. His place will be taken by Henry Varnum Poor, a graduate of the University, as assistant professor. Instructor Chloe Lesley Starks has been granted sabbatical leave for 1913-14.

In Mathematics: Professor Robert Edgar Allardice has been absent on sabbatical leave. Associate Professor Hans Frederick Blichfeldt has been made professor, and granted sabbatical leave for the second semester of the coming year.

In Applied Mathematics: Assistant Professor William Albert Manning has been made associate professor.

In Chemistry: Professor Edward C. Franklin, absent on sabbatical leave, will return to take up his work.

In Physics: Associate Professor Frederick J. Rogers has been granted sabbatical leave for 1913-14, and Harry C. Burbridge appointed instructor.

In Botany: Professor Douglas H. Campbell has been absent on sabbatical leave. Dr. Emilio P. Meinecke, pathologist of the United States Forest Service, served as acting professor of plant pathology during the first semester. Instructor McMurphy has been absent on leave for the year.

In Zoology: Assistant Professors Edwin Chapin Starks and Walter Kendrick Fisher have been granted sabbatical leave for the coming year.

In Entomology: Assistant Professor Mary Isabel McCracken has been granted sabbatical leave for the coming year.

In Civil Engineering: Instructor John Harrison Foss has been absent on leave.

In Mechanical Engineering: Instructor Laurence Edmonston Cutter has been made assistant professor. Assistant Professor Everett Parker Lesley has been granted sabbatical leave for 1913-14.

In Physiology: Instructor Frank Walter Weymouth has been made assistant professor.

In Medicine: Assistant Professor Thomas Addis has been made associate professor, and Instructor Edgar D. Congdon assistant professor. Assistant Professor Frank E. Blaisdell has been transferred from anatomy to surgery, and Assistant Professor Ernest Charles Dickson from pathology to medicine. In bacteriology, Dr. Hans Zinsser has resigned to accept a professorship in Columbia University. He is succeeded by Dr. Wilfred Hamilton Manwaring, a graduate of the University of Michigan, 1895, associate professor of pathology and bacteriology at Indiana University in 1905-07, and since that time traveling fellow and assistant in pathology at the Rockefeller Institute for Medical Research in New York. Dr. Walter W. Boardman has been added to the division of Medicine as assistant professor. Clinical Instructor Leo Eloesser has been appointed assistant professor of surgery, and Clinical Instructors Walter F. Schaller and Herbert H. Yerington have been appointed assistant clinical professors of medicine.

In the Registrar's Office: Dr. Orrin Leslie Elliott has been granted leave of absence for the first semester, Mr. John E. McDowell becoming acting registrar during his absence.

In the Library: Miss Frances S. C. James, medical librarian, has resigned, and Miss Louise Ophüls has been appointed to her place.

On May 23, 1913, by action of the Board of Trustees the office of Chancellor of the University was created and the writer appointed to fill it. This action was taken in

**Administra-
tive Changes**

response to an expressed wish to be relieved from administrative demands, with a view to having greater freedom to represent the institution in its func-

tions toward the public and toward educational agencies outside the University. Dr. John Casper Branner was appointed to the presidency, and Dr. John Maxson Stillman to the vice-presidency. The following definition of the relations of Chancellor and President was given, and may be here made a matter of record:

a. The duties of the President shall be those which, according to the deed of gift and the articles of organization, are vested in the President.

b. The duties of the Chancellor shall be to advise and cooperate in such matters as may be proposed by the Trustees or the President.

c. The Chancellor shall be entitled to attend meetings of the Trustees and their University Committee.

d. The Chancellor, when present, shall represent the University at public functions.

In announcing this change in administration at Commencement, Dr. Jordan made the following statement:

In the interest of larger duties toward the University and toward the public, I have expressed to the Board of Trustees the wish to be relieved so far as may be from routine duties of the presidency.

In appreciation of this wish, and for the expressed purpose of allowing me "to represent more fully the University in its functions toward the public, and the relations of the University to educational agencies outside the University itself," the Board of Trustees at its meeting on May 23d will create the new office of Chancellor of the University.

The position of President will be filled by Dr. John Casper Branner, my intimate friend for forty-three years, my academic colleague for twenty-nine years, and, as vice-president of the University for fifteen years, my closest administrative associate.

In accepting the chancellorship, and withdrawing from the immediate direction of administrative affairs, I shall abate no part of my interest in the University to which I have given the best years of my life, and to which I hope the best that remains will also be dedicated.

In placing the immediate control in the hands of one of the ablest of American scholars, one of the most successful of teachers and most loyal of men, I am sure that the Board of Trustees has made no mistake. So long as Dr. Branner shall direct its affairs the University will continue and develop the highest purposes of its founders and of our colleagues, who, through twenty-two eventful years, have maintained and carried forward its standards and ideals.

This was followed by a statement from Dr. Stillman, as follows:

With the consent of the President and at the request of members of the Board of Trustees, I am to speak a word of appreciation and welcome to President Jordan on assuming the new dignity of the chancellorship of the University.

The creation of this office has had two purposes: First—The division between the offices of chancellor and president of the burden of administrative duties and responsibilities hitherto vested solely in the president, and which the development of the modern university has made increasingly laborious and onerous. Second—In high appreciation of the great service President Jordan has rendered and is rendering, not merely to this University, but to the world's work in the cause of education, science, and civilization, it is intended that the institution of this new office shall, by thus relieving him of much of the routine of executive work, enable him to devote his attention in increasing measure to the greater problems within and without the University.

For twenty-two years President Jordan has been the inspiration of Stanford University. What it is is due mainly to his high ideals, his breadth of outlook, and warmth of sympathy. These qualities and abilities the University needs in the future as in the past, and these the office of chancellor insures us. Trustees and faculty, alumni and students, will continue to profit by his wisdom and his enthusiasms. But it is also recognized that the world at large has a claim upon his abilities which it should be the mission of Stanford to further and to encourage.

In the belief that the division of administrative functions between two such cooperative and sympathetic leaders as Chancellor Jordan and President Branner, will promote the efficiency, usefulness, and influence of the University, and that under their joint guidance the aims and ideals of Stanford University will be carried forward to greater and grander development, I venture to assume that I express the sentiment of the whole University community in extending to Chancellor Jordan our congratulations upon his well deserved and welcome respite from a large share of administrative detail, and upon his increased opportunities for the highest service not only to this his University, but to the wider world beyond its gates.

The Chancellor had already been granted sabbatical leave for the first semester of the new academic year to spend the summer and fall in Europe in connection with the work of the World Peace Foundation. Under the changed conditions it is understood that he will extend his absence throughout the year.

Under the terms of the Thomas Welton Stanford fund for

research in psychic phenomena, Dr. John Edgar Coover has held the fellowship thus created for the year, and he has been reelected for the new academic year. Dr. Coover is a graduate of the University, receiving his A.B. degree in 1904, his A.M. in 1905, and the Ph.D. in 1912. The Leland Stanford Junior Memorial Scholarship is held by William Francis Kilcline of the class of 1915. The scholar under the Law Association Fund has been Urban Alexander Sontheimer. Clyde T. Wetmore, 1913, and Harry A. Wyckoff, 1907, have been scholars under the Alumni Jordan Medical Fund, and Mary Wilhelmine Williams, 1907, fellow under the Alumni Advisory Fund.

The University has just received through the Acting Consul General for Japan, Honorable Y. Numano, a fund of \$1400 to maintain for 1913-14 an instructorship in Japanese history and government in the University. The fund is contributed by a group of Japanese donors, represented by Mr. T. Isaka of the Tokyo Kisen Kaisha (Oriental Steamship Company) and Mr. J. Fujihira of the Yokohama Specie Bank. It is the outgrowth of a movement outlined some time ago for the establishment of a chair of Japanese history in the University; and the present gift, while of a temporary nature, has this final object in view. Mr. Yamato Ichihashi, Stanford A.B. 1907, A.M. 1908, and recently a graduate student at Harvard University, has been appointed to the instructorship for 1913-14.

The University is under obligation to many donors for gifts of various kinds, grateful acknowledgment of which is here made. A list of these gifts follows:

The University:

From Trustee Thomas Welton Stanford, \$50,000, for reconstruction of the Museum Building, the part to be restored to house the large collection of paintings presented to the University in 1905 by Mr. Stanford.

From Japanese residents in San Francisco, through the Japanese Consul General, \$1,400—\$1,200 as salary and \$200 as a book fund—for the maintenance of an instructorship in Japanese history and government.

From Mrs. Anna M. Barber, of 1421 High Street, Alameda, \$300, this sum, with such additional sums as may hereafter be given, to constitute the "William Burton Barber Loan Fund," to be held in trust for the purpose of making loans without interest to needy and deserving students.

The University Library:

From Trustee Thomas Welton Stanford, second instalment of \$500 for the purchase of books on spiritism and related subjects.
 From Trustee Charles G. Lathrop, \$250, in continuation of previous gifts for the purchase of books and periodicals relating to the early history of California.
 From Trustee Herbert C. Hoover, a collection of books on China and the Far East, now loaned to the University Library.
 From Dr. David Starr Jordan, an extensive collection of books and pamphlets on Peace.
 From Mr. J. E. Hewston, Stanford University, the library of his father, consisting of 526 volumes on medicine, chemistry and history.
 From Biblioteca Nacional of Chile, 100 books and pamphlets.
 From Musée Royal d'histoire Naturelle de Belgique, 12 vols. Annales.
 From various institutions, societies, and individuals, numerous additional volumes and pamphlets for which direct acknowledgment has already been made.

The Lane Medical Library:

From the committee of the Medical Faculty, \$500, additional subscriptions to the Henry Gibbons, Jr., Library of Obstetrics and Gynecology in the Lane Medical Library.
 From Mrs. John Zeile, San Francisco, mural decorations at the Lane Medical Library.

Department of Medicine:

From Mr. Felton B. Elkins of San Mateo, Cal., \$900, an annual gift to pay the salary of the head nurse of the obstetric service in the Lane Hospital.
 From Mr. C. A. Coffin of New York City, \$250, being an annual subscription for the maintenance of research in Oriental diseases.
 From Mrs. Kate Felton Neilsen, \$250, for the benefit of patients in the clinical wards of the Lane Hospital.

Department of Botany (The Dudley Herbarium):

From Mr. R. M. Holman, an alumnus and former assistant in the department, 220 specimens of plants from the Philippine Islands.
 From Mr. T. J. Blethen, a student in the department, 75 specimens from the Sierra Nevada.

From Mr. F. J. Smiley, an assistant in the department, 125 specimens from the Sierra Nevada.

From Mr. S. B. Parish, 50 Southern California plants.

From Professor L. R. Abrams, 1,000 plant specimens from the Sierra Nevada.

Department of Zoology:

From Mrs. E. N. Stinson of Palo Alto, through Eric K. Jordan, the Kossuth Collection of about 600 fossil shells of the Pliocene or Pleistocene age, from the Adriatic.

From Mr. Charles R. Morrice of Bakersfield, California, numerous specimens of sharks' teeth.

The Museum:

From Messrs Salviati & Co., of Venice, certain pieces of Venetian glass for the completion of Venetian chandeliers in the Museum.

Department of Electrical Engineering:

From Professor Harris J. Ryan, a Westinghouse motor, a crystal rectifier, and minor items of equipment.

From Mr. C. F. Elwell, of Palo Alto, a 5-kilowatt, high-frequency power generator.

Department of Mechanical Engineering:

From the Root & Vandervort Company of East Moline, Ill., a 2-horsepower gasoline engine.

Department of Greek:

From Miss A. M. Stetson of Lenox, Mass., a valuable collection of photographs of Greek statuary and 3 filing cases for the housing of the same.

Department of Geology and Mining:

From Mr. J. E. Hewston, Stanford University, a large collection of geological specimens.

From Ralph Arnold and Harold Hannibal, a collection of Tertiary fossils from Washington.

From R. B. Moran, a collection of fossils from Ventura county, California.

From E. Call Brown, a collection of Tertiary and Quaternary fossils from Lower California.

From Mr. Tremper, a set of living shells from Southern California.

From the field class in summer geology, a set of rocks and fossils illustrating the geology of the San Jose, Pleasanton, and Tesla sheets.

From Dr. J. P. Smith, a set of Mesozoic fossils from Shasta county, California.

From W. G. Cooper, J. J. Beeson, C. E. Clowe, and C. I. Chandler, mineral specimens.

Report of the President

19

From E. M. Gleim of Shafter, Texas, one ton of silver ore.

From the Wedge Mechanical Furnace Company of Philadelphia, a framed picture illustrating the latest style of Wedge furnace.

From Braun-Knecht-Heimann Co., of San Francisco, forty dollars worth of assorted glass tubing.

The customary special reports by executive heads of departments, chairmen of committees, and other officers follow.

Respectfully submitted,

DAVID STARR JORDAN,
President.

July 31, 1913.

APPENDIX I

DEPARTMENTAL REPORTS

GREEK

The department faculty for the year 1912-13 consisted of Augustus Taber Murray, professor; Ernest Whitney Martin, associate professor; Miss Anna Shipley Cox, instructor.

The following courses were given:

INSTRUCTOR	COURSE	Unit Hours	Attendance of Students	
			1st Sem.	2nd Sem.
Murray	1 Elementary	5	4	3
Murray	4 Prose Composition	2	3	2
Murray	12 Greek Testament	2	8	3
Murray	13 Rapid Reading	3	..	4
Murray	18 Seminary	2-4	6	5
Murray	19 Rapid Reading	1-2	2	3
Murray	20 Greek Epic	2	51	..
Murray	21 Greek Tragedy	2	..	150
Fairclough ...	8 Sculpture	2	22	..
Martin	5 Homer	3	7	..
Martin	6 Greek Literature	3	..	5
Martin	7 Advanced Prose Composition	2	4	6
Martin	9 Demosthenes	3	4	..
Martin	10 Thucydides	3	..	3
Martin	14 Introductory	3	..	3
Martin	16 History of Greece	3	40	..
Cox	2 Simple Attic Prose	3	5	..
Cox	3 Odyssey	3	..	3
			156	190

AUGUSTUS TABER MURRAY,
Professor of Greek.

LATIN

In 1912-13 the department faculty consisted of H. Rushton Fairclough, professor; Jefferson Elmore and Benjamin Oliver Foster, associate professors; Anna Shipley Cox, instructor. Courses were also given by E. Whitney Martin, associate professor of Greek, while a course in Greek sculpture was given by Professor Fairclough of the Latin department. Professor Hempl, of the department of Germanic Languages, gave a course in Etruscan.

There were registered in the department during the year 35 major students, of whom 13 were graduates. Of these latter, 6 received the degree of Master of Arts.

The following is a tabular statement of the courses given and the enrollment in each:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Elmore	1a Introductory	3	4	5
Cox	1 Virgil and Cicero.....	3	5	7
Elmore	2 Terence, Cicero and Horace	3	11	..
Foster	2 Terence, Cicero and Horace	3	4	4
Fairclough ...	2 Terence, Cicero and Horace	3	..	5
Fairclough ...	3 Justinian	2	5	9
Martin, Cox...	4 Prose Composition I.....	2	5	6
Fairclough ...	5 Horace, Satires and Epistles.	3	12	..
Foster	6 Livy and Tacitus.....	3	..	4
Foster, Elmore	7 Prose Composition II.....	2	10	14
Foster	8 Roman Comedy.....	3	8	..
Elmore	9 Cicero's Letters.....	2	..	14
Cox	10 Pliny	2	2	..
Foster	11 Roman Elegy.....	3	..	3
Foster	13 Prose Composition III.....	1	..	6
Elmore	14 Juvenal and Martial.....	2	5	..
Fairclough ...	16 Quintilian	2	..	8
Elmore	17 Teachers' Course.....	2	8	..
Fairclough ...	22 Seminary in Horace.....	2-6	12	12
Fairclough ...	23 Rapid Reading.....	2	10	7
Foster	24 Apuleius	3	5	..
Foster ...	25 Palaeography	2	5	..
Martin	26 Epigraphy	2	..	5
Hempl	27 Etruscan	2	..	7
Elmore	29 History of Rome.....	3	..	122
Elmore	30 Studies in Roman History..	2	14	..
Cox	32 Roman Private Life.....	2	23	..
Elmore	Thesis in Roman History....	1	..	1
			148	239

Of the courses enumerated above, those indicated as 29 and 32 require no knowledge of Latin.

HENRY RUSHTON FAIRCLOUGH,
Professor of Latin.

GERMAN

During the academic year 1912-13 the teaching staff of the department consisted of George Hempl and James Owen Griffin, professors; Karl G. Rendtorff, William Alpha Cooper and Macy Millmore Skinner, associate professors; Bruno Boezinger and Herman Hilmer, assistant professors. Professor Boezinger was in Europe during the year, his place being filled by Dr. Friedrich Alexander Wyneken.

The following is a tabular statement of the number of students in the various courses:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cooper, Skinner, H. Hilmer..	1 Elementary	5	62	60
Hempl, Griffin, H. Hilmer, N. Hilmer, Skinner	2a Second-year Reading	3-5	99	93
F. A. Wyneken	2aa Scientific Reading.....	3	39	32
Griffin, Cooper, Wyneken ...	2b Second-year Composition ...	2	49	30
Griffin, Rendtorff ...	3 Classical Drama	3	37	33
Griffin	4 Modern Drama	2-3	35	21
Skinner	5 Modern Novel	2-3	44	42
Hempl	6 Advanced Grammar	2-5	9	11
Wyneken	7 Composition	2	23	22
H. Hilmer	8 Advanced Composition	2	15	15
Skinner	10 Schiller	2-3	12	13
Cooper	11 Goethe	3	14	11
Rendtorff	13 History of Literature.....	2	6	6
Hempl	14 Teaching of Modern Lang...	2	6	6
Rendtorff	16 Middle High German.....	2	8	8
Rendtorff	21a Hist. of German Civilization	2	9	8
Rendtorff, Griffin, Cooper	23 Thesis Work	var.	8	8
			475	419

There were registered in the department 67 major students, of whom 11 were graduates and 56 undergraduates. Of the graduate students, 5 were candidates for higher degrees, and at the close of the college year the degree of Master of Arts was conferred upon Edward Vere Brewer and Misses Catharine Morris Cox, Lydia Lucile Meyer, Clara Lydia Schaaf and Elsie Louise Whittemore.

GEORGE HEMPL,
Professor of Germanic Philology.

ROMANIC LANGUAGES

The faculty of the department for the year 1912-1913 consisted of Oliver Martin Johnston and Colbert Searles, associate professors, the former advanced to a professorship; Clifford Gilmore Allen; Albert Léon Guérard and Aurelio Macedonio Espinosa, assistant professors; Robert Edouard Pellissier, instructor; George Louis Lawrence, teaching assistant.

For the coming academic year Associate Professors Allen and Guérard will be absent, the former on sabbatical leave, and the latter filling a professorship in the Rice Institute, Houston, Texas. Mr. George Louis Lawrence has been made assistant, and Mr. Louis P. deVries instructor, in the department for the ensuing year.

At the end of the second semester, Instructor Pellissier received the degree of Doctor of Philosophy from Harvard University.

The following is a list of the courses given during the year, with the attendance in each:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Allen, Pellissier	1a Elementary French	3	75	58
Pellissier	1b Elementary French, Reading Course	3	38	32
Searles, Guérard	2 Second-year French Compo- sition	2	37	31
Guérard, Pellissier	3 Modern French Reading....	2	87	63
Searles	4 French Pronunciation.....	1	10	7
Guérard	5 Reading and Writing of French	3	14	17
Guérard	6 Advanced French Prose Com- position	2	10	8
Searles	7 Outline Course in the History of French Literature....	3	20	14
Searles	8 Classical French	3	15	19
Searles	9 History of French Literature in the Nineteenth Cen...	3	5	5
Guérard	10 French Lyric Poetry.....	2	4	..
Guérard	11 French Civilization.....	2	..	6
Pellissier	12 The French Drama in the Nineteenth Century.....	2	11	..
Pellissier	13 The French Novel during the Nineteenth Century	2	..	8
Allen, Espinosa, Lawrence, Pellissier	14 Elementary Spanish	3	161	134
Espinosa	15 Second-year Spanish Compo- sition	3	32	15
Espinosa	16 Modern Spanish Reading....	2	37	31
Espinosa	17 Spanish Pronunciation.....	1	5	..
Espinosa	18 Advanced Spanish Compo- sition	2	10	7
Allen	19 Classical Spanish	2	6	7
Allen	21 Outline Course in History of Spanish Literature	2	5	5
Allen	22 Origins of Spanish Theater..	2	5	..
Espinosa	23 Introduction to the Study of Old Spanish	3	..	5
Johnston	24 Elementary Italian	3	7	6
Johnston	25 Advanced Italian	3	6	5
Johnston	30 French Historical Grammar.	2	..	3
Johnston	31 Old French Literature.....	2	3	..
Johnston	32 Floire et Blancheflor	2	4	4
Guérard	International Language .....	..	..	1
			607	491

OLIVER MARTIN JOHNSTON,
Professor of Romanic Languages.

ENGLISH LITERATURE AND RHETORIC

The teaching staff of the department for the year 1912-13 consisted of Alphonso Gerald Newcomer, professor; Samuel S. Seward, Jr., Howard Judson Hall, Henry David Gray, Everett Wallace Smith, assistant professors; Theresa Peet Russell, Edith Ronald Mirrielees, Van Wyck Brooks, instructors; Elizabeth Lee Buckingham, acting instructor. Mrs. Evelyn Wight Allan, Dean of Women, conducted one course in Shakespeare.

The following table indicates the courses given, with the enrollment in each. In addition to these, Mr. Seward gave a course in the Department of English Philology.

INSTRUCTOR	COURSE	Unit Hours	Enrollment	
			1st Sem.	2nd Sem.
Mirrielees, Stidston, Hammond ..	a Elementary Composition....	1	121	62
Buckingham ..	1b Vocal Expression	3	71	62
Seward, Hall, Russell, Smith, Brooks	2 English Composition.....	2	231	243
Newcomer ...	4 Modern English.....	2	30	..
Mirrielees ...	5 English Classics.....	3	69	75
Brooks	6 Outline History of English Literature	3	46	..
Brooks	7 American Literature.....	3	..	113
Hall	10 Tennyson	3	..	41
Russell	12 Advanced Composition.....	4	25	20
Smith	13 News Writing.....	2	33	29
Newcomer, Allan	15 Shakespeare	3	76	18
Russell	16 English Bible.....	3	..	55
Seward	20 Victorian Literature.....	2	24	27
Mirrielees ...	25 Short Story Writing.....	2	25	14
Gray	26 Play Construction.....	2	4	7
Smith	27 Current Newspapers.....	3	13	10
Seward	30 Prosody and Language.....	3	..	7
Hall	31 Wordsworth	2	43	..
Gray	36 English Fiction.....	3	51	..
Gray	39 Modern Novel.....	3	..	42
Seward	42 Teachers' Course.....	2	17	17
			879	842

Mr. Bassett, on leave of absence, spent the year at the University of Washington, conducting courses in public speaking and debate. Dr. Briggs was on sabbatical leave throughout the year, traveling and studying abroad. Professor Newcomer spent the second semester in Europe, also on sabbatical leave, during which time Mr. Seward held the appointment of acting executive.

The number of major students registered in the department was 146, of whom 7 were special students and 18 graduates. Thirty-two were given the degree of A. B., and 2 that of A. M.

SAMUEL S. SEWARD, JR.,
Assistant Professor of English.

ENGLISH PHILOLOGY

During the academic year 1912-13, Mr. S. S. Seward, Jr., of the Department of English Literature conducted the elementary course in Anglo-Saxon.

The central work of the department was done in the advanced courses. The Seminary was devoted to a study of Paleography, and in connection with it some sixty plates, specially made for this course, were carefully examined. In connection with course 9, a teachers' course was conducted, during the second semester.

The following is a list of the courses given during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Seward	1 Anglo-Saxon	3	18	..
Flügel	2 Elementary Chaucer.....	2	47	..
Flügel	3 Early Literature.....	3	45	..
Flügel	4 Middle English.....	2	6	..
Flügel	6 English Paleography.....	2	7	6
Flügel	7 Middle English.....	2	..	12
Flügel	8 Advanced Chaucer.....	2	..	34
Flügel	9 Ballads	2-3	..	37
Flügel	12 Journal Club.....	2	4	4
			127	93

EWALD FLÜGEL,
Professor of Philology.

PHILOSOPHY

The faculty of the department for the year 1912-13 consisted of Henry Walgrave Stuart, professor, and George Holland Sabine, assistant professor. The courses conducted, with the numbers enrolled, were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Stuart, Sabine.	Elementary Logic.....	3	51	..
Stuart	Elementary Ethics.....	3	20	..
Sabine	History of Philosophy.....	3	26	21
Sabine	Philosophy of the XIX Century..	3	4	..
Sabine	Philosophy in the Life of the XIX Century	3	..	17
Stuart	Advanced Logic.....	3	..	33
Stuart	Practical Ethics.....	3	..	7
Sabine	History and Application of the Theory of Evolution.....	2	..	34
Stuart	Outlines of General Philosophy..	2	9	..
Stuart, Sabine.	Seminary .....	..	3	9
			113	121

In March Dr. Stuart was granted sabbatical leave for the academic year 1913-14. In April Dr. Sabine was advanced to the rank of associate professor, and Dr. Warner Fite, Professor of Philosophy in the University of Indiana, was appointed acting professor for the first semester of the year 1913-14.

HENRY WALDGRAVE STUART,
Professor of Philosophy.

PSYCHOLOGY

The staff in Psychology for the year 1912-13 consisted of Frank Angell and Lillian Jane Martin, professors.

Our records show that of the large number of students instructed by the department last year—over a quarter of all the students in the University—but a small number are to be found doing advanced laboratory or research work in Psychology, a state of affairs which seems to prevail more or less throughout the larger universities of the country.

Without going into a detailed discussion of the conditions which have determined the mis-proportion, it is worth while at least to point out that students, in general, will not subject themselves to advanced

laboratory work in any science which does not hold out some prospect of application or which is not a professional requirement.

There are, however, signs that the time is rapidly approaching when the demand for higher psychological training for rounding out professional work in certain disciplines can no longer be ignored.

This is already the case in Germany with respect to criminology and psychiatry, and in this country the impulse is already felt in education.

The attendance in the several courses was as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Angell	1 General Psychology.....	4	167	..
Martin, Angell.	2 Beginners' Laboratory.....	3	20	18
Angell	3 Space Perception.....	2	3	3
Angell	4 Advanced Laboratory.....	3	4	4
Martin	5 Psychology of Fine Arts....	2	32	..
Martin	6 Abnormal Psychology.....	2	..	119
Martin, Angell.	7 French and German Psychol- ogy	1	5	5
Martin	8 Thinking	2	..	14
Angell	9 Research	Indef.	1	1
Martin	1a Mental Hygiene.....	2	..	97
			232	261

The sub-department of Psychical Research has taken formal possession of three rooms in this building. It has, of course, in addition the general freedom of the laboratory for any form of research work.

FRANK ANGELL,

Professor of Psychology.

PSYCHICAL RESEARCH

Work was begun on the general problem of telepathy, with the specific aim of testing the validity of a 'suggestion mentale', which the investigations of Richet led him to propose as a normal human capacity; and of acquiring chance series of various ratios of probability, which could be used as a 'practical' probability to control inferences from such experimental results as have heretofore acquired meaning only by a comparison with theoretical probability.

Five thousand experiments were carried out, with the assistance of 41 reagents and 27 experimenters, all of whom were students in psychology; 1000 judgments were made upon "the feeling of being stared at," 1000 in Lotto-block number-guessing, and 3000 in card-guessing;

each judgment was accompanied by introspections. About half of the experiments were 'control experiments.'

The number of books and periodicals relating directly or indirectly to psychical research has been materially increased, both from the funds of the department and from the special fund set apart in the bequest for this purpose; office equipment and some good pieces of apparatus have been installed; and a bibliography of the subject has been well started.

JOHN EDGAR COOVER,

Fellow in Psychical Research.

EDUCATION

The following is the record of attendance in the several courses offered by the department during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Cubberley	1 Public Education in America	2	166	..
Davidson	2 Introd. Educational Theory..	2	..	151
Sears	3 History of Education in Europe	3	16	22
Sears	6 Elementary Education.....	2	20	22
Davidson	7 Social and Moral Education.	2	9	10
Davidson	8 Logic of Education.....	3	10	..
Cubberley	9 City School Administration	3	16	14
Cubberley	10 State School Administration	2	17	18
Terman	11 Physical Aspects of the Child	3	44	..
Terman	12 Educational Hygiene.....	3	..	65
Bentley	13 Secondary Education.....	3	..	73
Bentley	15 The Administration of a School	2	..	11
Bentley	16 Types of Secondary Schools	2	..	8
Sears	17 Method and Management of Instruction	1	35	29
Sears	18 Practice in Teaching.....	4	15	18
Cubberley	19 Sources in the History of Ed- ucation	2	3	3
Sears	20 Criticism of Instruction.....	2	1	5
Terman	23 Clinical Child Psychology...	2	11	12
Terman	24 Educational Psychology.....	2	12	11
Davidson	26 Experimental Teaching.....	3-4	2	3
Cubberley	30 The Training of Teachers...	2	..	7
Cubberley	31 Thesis Work.....	1	..	1
Davidson	32 Special Courses.....	2-5	3	..
Terman	32 Special Courses.....	2	..	2
Cubberley	32 Special Courses.....	2-3	1	2
			381	487

The members of the department for 1912-13 were Ellwood P. Cubberley, professor; Percy E. Davidson, Rufus C. Bentley, and Lewis M. Terman, associate professors; Jesse B. Sears, assistant professor.

Professor Bentley continued his visitation of secondary schools in the state during the first semester.

ELLWOOD PATTERSON CUBBERLEY,
Professor of Education.

HISTORY

The faculty for the department for the year 1912-13 consisted of Professors Ephraim Douglass Adams, Arley Barthlow Show and Edward Benjamin Krehbiel; Associate Professors Payson Jackson Treat and Henry Lewin Cannon; Assistant Professors Edgar Eugene Robinson and Percy Alvin Martin; Lecturer David Starr Jordan.

Mr. Treat was granted leave of absence for the first semester, and spent the time in travel and study in Japan, Korea, China and the Philippines. Mr. Adams, on leave of absence during the second semester, was engaged in study in the departments of State and Navy, at Washington, and gave the "Dodge Lectures on Citizenship" at Yale University during April and May.

Three members of the department gave courses in the summer schools of other universities: Mr. Adams at Harvard University; Mr. Krehbiel at Columbia University; Mr. Robinson at the University of Minnesota.

The number of major students registered in the department for the year was 187, of whom 173 were undergraduates, 12 graduates, and 2 specials.

The Master of Arts degree was conferred in May, 1913, upon 3 students: Ella Wissie Beaver—Thesis, "The Preparation of the Spanish Armada"; George Lutes Righter—Thesis, "The Defeat of the Spanish Armada"; Francis Marion Russell—Thesis, "The Development of Arbitration in the United States."

The following is a list of courses given in 1912-13, with hours of credit and attendance for each semester:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Martin	1 Training	1	52	43
Show	3a Middle Ages.....	3	63	..
	3b Middle Ages.....	3	..	61
Cannon	4a English History.....	3	64	..
	4b English History.....	3	..	75
Krehbiel	5a European History.....	2	131	..
	5b European History.....	2	..	122
Robinson	6a American Colonial History..	3	166	..
	6b American Colonial History..	3	..	168
Adams	7 United States History.....	2	101	..
Robinson	8 Westward Movement.....	2	58	73
Treat	9b The Far East.....	3	..	154
Martin	10 Spain and Spanish America	2	12	21
Cannon	11a English Constitutional.....	2	44	..
	11b English Constitutional.....	Var.	..	38
Martin	12 History of Germany.....	3	27	19
Show	14a German Institutions in Later Middle Ages.....	2	4	..
	14b German Institutions in Later Middle Ages.....	2	..	4
Krehbiel	15a French Revolution and Na- poleon	3	31	..
Show	16 Teachers' Course.....	2	35	30
Cannon	17 Periodical Literature.....	1	12	12
Adams	18a England and America in Civil War	3	13	..
Williams	18b England and America, 1815 to 1860.....	3	..	8
Jordan, Krehbiel	20 International Conciliation....	2-3	..	128
Treat	22 History of Australasia.....	2	..	27
Show	27 Mediaeval Institutions.....	2	2	2
Robinson	28 Seminary in Westward Move- ment	2	5	10
Cannon	29 Seminary in English History	2	11	10
Adams, Williams ...	31 American Diplomatic History since 1815.....	2	8	7
Krehbiel	32 Seminary in Modern Euro- pean History.....	2	24	22
Treat	36 American Diplomacy in the Far East.....	2	..	4
	Thesis	Var.	2	1
			865	1039

EPHRAIM DOUGLASS ADAMS,
Professor of History.

ECONOMICS

The work of the department for the year 1912-13 was carried on by Professors Murray S. Wildman, Burt Estes Howard; Assistant Professor Ira Brown Cross; Instructors Donald F. Grass, Stephen I. Miller, Jr.; Acting Instructor Max L. Larkin, and two teaching assistants.

The courses given and the attendance in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Wildman	1 Elements	3	300	268
Grass	2 Accounting	3	32	..
Grass	3 Insurance	2	..	78
Wildman	4 Money and Banking	2	76	47
Miller	5 Transportation	3	..	67
Wildman	8 Corporations	3	65	43
Cross	10 Labor Problems	3	..	37
Cross	12 Charities	3	..	93
Cross	12a Corrections	3	84	..
Cross	13 Socialism	3	43	..
Larkin	15 Statistics	2	27	..
Larkin	16 Market Organization	3	23	..
Larkin	17 Statistics (advanced)	2	..	5
Cross	18 Seminar in Labor	2	..	11
Miller	20 Public Finance	3	43	..
Cross	22 Seminar in Labor	2	13	..
Grass	23 Business Administration	2	..	64
Larkin	25 Value and Distribution	3	..	11
Larkin	26 History of Economics	3	11	8
Wildman	27 Graduate Seminar	2	10	9
Howard	30 Comparative Government	3	11	..
Howard	31 American Politics	3	37	..
Howard	32 Municipal Government	3	..	17
Howard	33 Parliamentary Government	3	..	11
Howard	34 Seminary	2	11	4
Larkin	* Thesis	4	..	2
			786	775

Professor Albert C. Whitaker was absent on leave during the entire year, giving courses in the University of Chicago.

MURRAY SHIPLEY WILDMAN,
Professor of Economics.

LAW

The faculty of the law school for the year 1912-13 consisted of Professors Frederic Campbell Woodward, Arthur Martin Cathcart, Wesley Newcomb Hohfeld, and Joseph Walter Bingham; Acting Professor Emelin McClain (for the second semester only), and Assistant Professor Marion Rice Kirkwood. Professor Charles Andrews Huston was absent on sabbatical leave. The course in California Practice was given by Samuel Watson Charles, Esq., of Palo Alto.

The courses of instruction given and the enrollment in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Kirkwood	1 Introductory	2	..	74
Kirkwood	2 Crimes	4	43	..
Cathcart	3 Constitutional Law.....	4	..	32
McClain	10 Persons	2	..	26
Bingham	11 Introduction to Property....	3-3	43	40
Bingham	12 Title to Land.....	4	33	..
Bingham	16 Water Rights.....	3	..	18
Bingham	17 Mining Law.....	2	..	15
Cathcart	18 Torts	3-3	69	64
Woodward	19 Quasi-Contracts	3	..	23
Woodward	20 Contracts	3	64	65
Woodward	22 Sales	4	28	..
Kirkwood	23 Agency	4	..	39
McClain	26 Carriers	2	..	23
McClain	28 Insurance	3	..	14
Hohfeld	31 Equity I.....	4	..	27
Hohfeld	32 Trusts	4	36	..
Kirkwood	33 Equity III.....	2	32	..
Cathcart	35 Pleading	4	31	..
Hohfeld	36 Evidence	3-3	21	20
Charles	37 California Practice.....	3	..	20
			400	500

The registration of students in the law school was 147, of whom 36 were graduate students, 95 undergraduates, and 16 special students. The registration of students in the pre-legal course, excluding those who are counted as students in the law school, was 151. The total registration, including both law and pre-legal students, was 298.

The total number of volumes in the law library on August 1, 1912, was 15,987. During the year 407 volumes were added. Of these, 326 were acquired by purchase, 11 by gift, and 70 by binding. The total number of bound volumes in the library on July 31, 1913, was 16,394.

Professor Charles Henry Huberich resigned at the opening of the year, and Judge Emlin McClain, formerly of the Supreme Court of Iowa, was appointed, first as an acting professor for the second semester, and subsequently as a permanent professor of law.

FREDERIC CAMPBELL WOODWARD,
Professor of Law.

GRAPHIC ART

The personnel of the department faculty was as follows: Arthur Bridgman Clark, associate professor; Robert Bartholow Harshe, assistant professor; Mrs. Chloe Lesley Starks, instructor.

Assistant Professor Harshe resigned at the close of the year to take a position as assistant art director of the Panama-Pacific Exposition. Henry Varnum Poor, a graduate of the department, and an instructor during 1911-12, has been appointed assistant professor in Mr. Harshe's place.

During the year public exhibitions have been given as follows:

Etchings and the process, demonstrated by Professor Harshe;

Landscape and marine paintings, by Mrs. Starks;

Landscape paintings, by an unusually advanced student, Mr. Ernest Nelson;

Also a loan exhibition of etchings of the California Etching Society.

The courses of instruction and attendance follow:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Starks	1 Elementary	2-4	27	39
Harshe	2, 3 Costume Figure	2-5	14	11
Harshe	4 Oil Painting	2-5	12	6
Starks	4a Water Color	2-3	..	14
Clark, Harshe.	5 Landscape	3	15	..
Clark	6 Lectures	2	49	58
Clark	7 Organic Form	3	..	18
Clark	8 Perspective	2	..	32
Starks	9 Science Drawing	2	2	2
Clark, Harshe.	10 Teachers' Course	3	..	17
Clark	11 Design	3	17	3
Harshe	12 Illustration	2-6	3	9
Clark	13 Handicraft	2	24	20
			163	229

ARTHUR BRIDGMAN CLARK,
Associate Professor of Graphic Art.

MATHEMATICS

The instructing body of the department for the year 1912-13 was composed of Rufus Lot Green, professor; Hans Frederick Blichfeldt, associate professor; William Albert Manning, assistant professor; and Harry C. Burbridge and George W. Moffitt assistants. Professor Robert Edgar Allardice was absent on leave in Europe.

The program of work and attendance was as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Manning, Mof- fitt	1 Trigonometry	2	42	..
Blichfeldt	2 Solid Geometry.....	2	..	26
Green, Bur- bridge	3 Algebra	5	81	..
Green	4 Co-ordinate Geometry.....	5	..	15
Manning	7 General Course.....	3	33	23
Blichfeldt	9 Calculus	3	17	15
Green	10 Advanced Co-ordinate Geom.	2	7	8
Manning	11 Advanced Calculus.....	3	8	..
Blichfeldt	13 Non-Euclidian Geometry....	2	11	..
Blichfeldt	15 Differential Equations.....	3	9	7
Blichfeldt	22 Theory of Algebraic Numbers	3	3	3
Manning	23 Vector Analysis.....	2	..	6
Manning	24 Solid Analytic Geometry....	3	..	5
Green	25 Teachers' Course.....	2	..	5
			211	113

RUFUS LOT GREEN,

Professor of Mathematics.

APPLIED MATHEMATICS

The teaching staff of the department during the year 1912-13 was constituted as follows:

Professor Leander Miller Hoskins; Associate Professors Halcott Cadwalder Moreno and Sidney Dean Townley; Assistant Professors William Albert Manning and Ernest William Ponzer; and Instructor E. Leonard Lundgren. Professor Manning's services were divided between this department and that of pure mathematics, about two-thirds of his time being given to the latter.

The courses of instruction given, with the enrollment in each, are shown in the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Lundgren	A. Solid Geometry	2	20	..
Lundgren	B. Trigonometry	3	..	35
Ponzer, Lundgren ...	1 First-year Mathematics	10	122	90
Moreno, Manning, Ponzer	2 Calculus	6	101	86
Hoskins, Moreno, Townley	3 Theoretical Mechanics	10	107	85
Townley	4 Adjustment of Observations	2	..	4
Townley	5 General Astronomy	3	14	..
Townley	5a Practical Astronomy	3	..	13
Hoskins	6 Hydromechanics	2	1	1
Hoskins	*3a Hydraulics	3	..	66
Hoskins	*3b Hydraulic Motors	3	19	..
			384	380

*Scheduled under Engineering.

LEANDER MILLER HOSKINS,

Professor of Applied Mathematics.

CHEMISTRY

The teaching staff in the Department of Chemistry for the year 1912-13 consisted of Professors John Maxson Stillman, Lionel Remond Lenox, Stewart Woodford Young, Robert Eckles Swain; Assistant Professor John Pearce Mitchell; Instructors William Henry Sloan, George Shambaugh Bohart, Harry Johnson Sears; Acting Instructor Alice Ruth Berger.

Professor Edward Curtis Franklin was absent on sabbatical leave. Attendance in various courses, Department of Chemistry, 1912-13:

LECTURE COURSES

INSTRUCTOR	COURSE	Units per Week		Attendance	
		1st Sem.	2nd Sem.	1st Sem.	2nd Sem.
Mitchell	*1 General Inorganic....	2	2	121	102
Mitchell	*1 General Inorganic....	3	2	54	55
Stillman	*2 Principles	3	3	25	18
Swain	*3 Organic	2	2	22	22
Swain	†3a Organic (Medical)...	..	3	...	24
Stillman	*4 Industrial	2	2	23	17
Stillman	†5 History of Chemistry	2	..	7	...
Lenox	†6 Qualitative Analysis..	1	1	24	39
Young	*8 Physical Chemistry...	3	3	12	11
Young	†10 Applied Physical Chemistry .....	..	2	...	14
Swain	†11 Physiological Chem...	3	..	24	...
Stillman, Swain	*12 Seminary	1	1	16	16
Mitchell	Chemical Calculations	..	2	...	19
				328	337

*Courses continuing through the year.

†Courses complete in semester.

LABORATORY COURSES

Mitchell, Sears and assistants	*1a General Inorganic	2	47	..
Goddard, Murray, Mosher	2a General Inorganic.....	2	68	44
Lenox, Berger.	b Qualitative Analysis.....	3	24	39
Bohart	c Organic Preparations.....	3	4	6
Sloan	d Quantitative Analysis.....	3 to 4	12	16
Lenox, Sloan..	e Mineral Analysis.....	3 to 4	5	5
Young, Van Sicklen	f Physical Chemistry.....	3 to 5	3	7
Swain, Harding	g Physiological Chemistry.....	3	27	..
Lenox, Waelty	h Assaying	3	9	16
Young	i Applied Physical.....	2	..	1
Lenox, Sloan..	k Analytical Chemistry.....	4	..	12
Stillman	Advanced, Special or Research Lab. Work.....	2-3	5	2
Lenox	Advanced, Special or Research Lab. Work.....	5	1	1
Young	Advanced, Special or Research Lab. Work.....	3-5	5	5
Swain	Advanced, Special or Research Lab. Work.....	3-5	3	6
			213	160

* All laboratory courses arranged on a one-semester basis.

Work of research carried on during the year was as follows:

Professor Young continued his studies in connection with the elimination of sulphur from smelter fumes, and has also been occupied with investigation of a theory of free oxidation. In conjunction with Professor Zinsser he has investigated the physical chemistry of precipitative reactions in immune sera, and upon light as a factor in bacterial metabolism.

Professor Swain, in conjunction with Assistant Professor Mitchell, has developed a method for the accurate determination of small amounts of sulphur dioxide in air.

Assistant Professor Mitchell has been engaged in the study of contamination of the atmosphere by dust from cement plants, with Professor Swain, as above noted. He has also introduced a course in chemical calculations which has met with appreciation in the department.

Instructor Bohart has continued his studies on the reactions of certain nickel, cadmium and chromium salts in liquid ammonia. Instructor Sears was engaged in studies upon the agglutination of bacteria by acids, under direction of Professors Zinsser and Young. Acting Instructor Alice R. Berger has developed improvements in certain qualitative and quantitative separations, under direction of Professor Lenox.

Mr. W. J. Van Sicklen has studied, under direction of Professor Young, the mechanical stimulus to crystallization, and has also pursued studies on an aluminum rectifier.

Mr. E. M. Hogg, under direction of Professor Young, has studied the corrosion of iron and the passive state of iron.

Mr. L. W. Pingree, under direction of Professor Young, has been occupied with a study of the light-sensitiveness of colloids.

Mr. Z. Ostenberg, under direction of Professor Young, has studied chemical reactions under the influence of silent discharge of electricity.

Mr. E. R. Harding has been engaged with Professor Swain in the methods of determination of allantoin in animal fluids.

Mr. P. M. Levy and Mr. G. C. Swan, under Professor Swain's direction, have studied the composition of the tissues of certain marine molluscs.

Mr. C. K. McWilliams, under direction of Professor Swain, studied the effects of tungsten salts in the animal organism.

Mr. J. W. Jones is studying the effects of certain inorganic substances upon the inversion and decomposition of sugar solutions, under direction of Professor Stillman.

JOHN MAXSON STILLMAN,
Professor of Chemistry.

PHYSICS

The teaching faculty of the Physics Department for the year 1912-13 consisted of Professor Fernando Sanford, Associate Professor Frederick John Rogers, Assistant Professors Elmer Reginald Drew and Joseph Grant Brown, Instructor Perley Anson Ross.

The total registration of major students was 11, of whom 4 were graduates and 7 undergraduates. One bachelor's degree and 2 doctor's degrees were given in the department.

The courses of study, with the enrollment in each for the year, are given in the following table:

INSTRUCTOR	COURSE	Units Hours	Attendance	
			1st Sem.	2nd Sem.
Ross, Burbridge, Moffitt, Howell	1 Dynamics	5-3	30	27
Drew, Howell.	2 Elec. and Mag.	4	9	..
Ross, Burbridge ..	3 Heat	4	..	16
Brown, Moffitt	4 Sound	3	7	..
Brown, Howell	5 Elementary Optics.....	3	..	5
Brown, Wiseman ...	6a Engineers' Physics.....	4	41	..
Rogers, Moffitt	6b Engineers' Physics.....	4	..	38
Drew, Wiseman ...	7 Gen. El. Physics.....	4	18	21
Brown	8 Mech. Meas.	2	..	1
Rogers, Burbridge ..	9 Elec. Meas.	4	21	5
Sanford	11 Adv. Gen. Physics.....	5	5	5
Sanford	11a Physical Lit.	2	..	6
Drew	12 Anal. Mech.	4	..	1
Sanford	13 Teachers' Phys.	1	5	5
Sanford	19 Investigation .....	..	2	2
			138	132

FERNANDO SANFORD,
Professor of Physics.

BOTANY

The personnel of the department for the year 1912-13 was as follows: Professors Douglas Houghton Campbell and George James Peirce; Acting Professor Emilio Pepe Michael Meinecke; Associate Professor LeRoy Abrams; Assistant Professor Leonas Lancelot Burlingame; Instructor James Ira William McMurphy.

The courses, with the enrollment in each, are given in the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Peirce, Abrams, Burlingame	1 Elementary	3-3½	43	48
Abrams	1a Field	1	..	9
Meinecke	3a Forest Pathology.....	3	10	..
Abrams	6 Angiosperms	3	..	11
Peirce	8 Physiology	3	16	..
Peirce	9 Physiology	3	..	16
Burlingame ..	10 Anatomy and Technique....	3	13	..
Abrams	11 Geographical	3	10	..
Burlingame ..	12 Cytology	3	..	4
Abrams	14 Taxonomy	3	1	4
Peirce	16 Physiology	3	2	1
			95	93

Professor Campbell has been away on leave of absence for the year, studying and collecting, in the tropics of South America, in Malaysia, and in the Philippines.

Professor Peirce has finished and reported upon the experimental investigation, with Professors Swain and Mitchell of the Department of Chemistry, of the effects of smelter fumes upon vegetation. A report has also been made upon the peculiar one-celled organisms living in the concentrated brines from which salt is made on a commercial scale on the shores of the Bay of San Francisco. Further studies of respiration and of the formative influence of light have also been made.

Associate Professor Abrams has continued his studies of the flora of southern California and of the trees and shrubs of the Pacific Slope. During the year he prepared a list of the native trees and shrubs of California suitable for ornamental purposes, for Bailey's *Cyclopedia of Horticulture*, and revised the genus *Uva-ursi*, commonly known as manzanita, for the *North American Flora*.

Assistant Professor Burlingame has published a part of the minute study which he has been making of the genus of peculiar trees known as *Araucaria*, and has continued his morphological and cytological work on these and allied forms. He has devised an automatic electrical control for the temperatures of electrically heated ovens, and has had built for use in the laboratory a large and inexpensive incubator which promises to be very useful.

Mr. McMurphy, instructor, has been away on leave of absence, studying plant-pathology, particularly forest-pathology, at the University of Wisconsin, and returns at the beginning of next year.

Mr. Smiley, Assistant, working with Associate Professor Abrams, made a critical study of the taxonomy and distribution of the genus *Eriodictyon*, a group of shrubs peculiar to California and the southwest. The results of this study will soon be published.

Miss Williams, Assistant, finished a morphological study of one of the tropical liverworts collected by Professor Campbell.

With the assistance of a nephew, Mr. H. C. Dudley, of Duluth, Minnesota, the Department has published, as one of the University Series, a volume in memory of the late Professor Dudley. This volume embraces, in addition to the two addresses made by President Branner and Professor Campbell at the memorial service mentioned in the last report, and various biographical notes and appreciations which appeared in scientific journals,—scientific papers contributed by the members of the department and by former associates of Professor Dudley in this University, Messrs. Cannon and Wight, of the Carnegie Institution and of the United States Department of Agriculture, respectively.

The Department wishes to acknowledge the continued co-operation of the Department of Botanical Research of the Carnegie Institution of Washington, and of various other scientific institutions, but especially of the Forest Service and the Bureau of Plant Industry of the United States Department of Agriculture, through the courtesy of whose officers this University has had the advantage of the services of Doctor Meinecke, forest pathologist of this District of the Forest Service, who gave a course in his own subject during the first semester, thus making some amends for the absence of Mr. McMurphy throughout the year.

Professor Abrams, Curator of the Dudley Herbarium, reports an increase of 8,019 specimens in the general collection of mounted plants.

GEORGE J. PEIRCE,
Professor of Plant Pathology.

PHYSIOLOGY AND HISTOLOGY.

The teaching force of the department for the year 1912-13 consisted of Oliver Peebles Jenkins and Frank Mace McFarland, professors; Clara S. Stoltenberg, associate professor; J. Rollin Slonaker, assistant professor; Williard E. Kay, Jr., acting instructor instead of Mr. Frank W. Weymouth, absent on leave.

In the following table of statistics the numbers by which the courses are designated are those used in the Register for 1912-13, to which reference may be made for a more detailed explanation of the character of the courses.

INSTRUCTOR	COURSE	Unit Hours	Hours per Week		Attend- ance	
			Lec.	Lab.	1st Sem.	and 2nd Sem.
Jenkins, Kay, Draper	1 General Anatomy and Physiology	3	1	5	60	54
Jenkins, Slonaker	2 Physiology of Muscle, Blood and Circula- tion	3	1	5	20	..
Jenkins, Slonaker	3 Physiology of Digest- ion, Respiration, Nutrition	3	1	5	..	16
Stoltenberg ...	4 Structure of the Sense Organs	3	1	5	2	..
Stoltenberg ...	5 Structure of the Nerv- ous System.....	3	1	5	..	22
Jenkins, Kay..	6 Physiology of Nervous System and Sense Organs	3	1	5	17	..
Slonaker	7 The Vertebrate Eye...	2	..	6	..	1
Jenkins	8 Special Courses in Phy- siology	2	2	3	..	8
McFarland, West	9 Histology	3	1	6	25	25
McFarland	9a Histology Technique..	1-2	..	3-6	..	6
McFarland	13 Special Courses in Hist- ology	2-3	..	3-9	2	7
McFarland	14 Journal Club	1	..	..	7	10
McFarland, Slonaker	Research in Physiology and Histology	2-6	..	6-18	3	2
					158	151

Professor McFarland continued his work on the Nudibranchs of Monterey Bay and the Spermatogenesis of the fur seal. During the summer of 1913 he was in charge of the session of the Marine Biological Laboratory at Pacific Grove.

Associate Professor Stoltenberg has continued her investigation of the nerve tracts in the brain and spinal cord of rodents.

Assistant Professor Slonaker has continued the study of the effects of a strictly vegetable diet on the fecundity of the white rat, its character, number of young and rate of growth through several successive generations. He has in preparation a paper on the development of the eye and accessory structures of the English sparrow. In conjunction with Dr. Casey A. Wood of Chicago he has continued the study of the visual apparatus in birds.

Research work by students has been carried on in the laboratory during the year as follows: On the luminous organs of Cephalopods, by Stillman S. Berry; on Heterochromosomes in certain insects, by Dr. Jaime de Angelo; on the effect of sunlight on the reproduction, growth and longevity of white mice, by Williard E. Kay, Jr.

OLIVER PEEBLES JENKINS,
Professor of Physiology.

PHYSICAL TRAINING AND PERSONAL HYGIENE

ENCINA GYMNASIUM

The staff for the year 1912-13 consisted of Royce Reed Long, assistant professor and director; Harry Wilfred Maloney, assistant in boxing and fencing; and the following general assistants: J. F. Chapman, J. P. Crawford, F. H. Hilton, G. S. Holeman, E. R. Knollin, E. T. Scott, A. B. Stuart C. H. Wollaston, C. T. Wetmore and H. A. Wyckoff.

The following table gives the enrollment for the year:

INSTRUCTOR	COURSE	Hours per week	Unit Hours	Attendance	
				1st Sem.	2nd Sem.
Long, Maloney, and Assistants	1 Physical Training, Personal Hygiene	3 Gym.	1	334	286
Long	2 Physical Training Methods	3 to 6 Gym., Lab.	1-2	4	4
Long	3 Public Health.....	2 lectures, references, required trips.....	1	14	..
Long	4 Individual Hygiene	1 lecture, references assigned	1	..	24
				352	314

ROYCE REED LONG,
Director of Physical Training.

ROBLE GYMNASIUM

The teaching in Roble Gymnasium has been carried on by Clelia Duel Mosher, assistant professor in physical training; Harry Wilfred Maloney, assistant in fencing; Maud Cleveland, instructor; Florence Cotton Burrell, Etta L. Paris and Catharine Cox, gymnasium assistants.

The hygiene conference with each woman entering the University; the close supervision of the effect of the physical training work on the individual student, by monthly conferences; the informal talks on hygiene and kindred subjects or selected reading for women when not taking active exercise, have been continued and are proving increasingly profitable.

The course in personal hygiene has been increased from one to two university units, making it possible to increase the amount of outside reading and laboratory demonstration. The number electing this course has increased from 13 last year to 48 this year.

The following table gives the statistics of these subjects:

INSTRUCTOR	COURSE	Hours per Week	Unit Hours	Attendance	
				1st Sem.	2nd Sem.
Mosher, Maloney, Cleveland, Burrell, Cox, Paris..	Physical Training and Personal Hygiene	3	1	176	178
Mosher, Burrell	Personal Hygiene	3	2	...	48
Paris	A Practice Teaching	1	0	...	24
Cleveland	C Playground Administration	1	1	...	17
Burrell	D Supervision of Children's Play..				
				176	274

The wisdom of the policy of the Public Health Committee in limiting the work of the medical adviser to women to hygienic measures has been demonstrated. The number of women coming for consultation is steadily increasing. All cases requiring more than the alteration of the individual hygiene have been referred to some physician chosen by the student.

CLELIA DUEL MOSHER,
Medical Adviser and Director.

ZOOLOGY

The faculty of the department for the year 1912-13 was as follows: Charles Henry Gilbert, George Clinton Price and Harold Heath, professors; John Otterbein Snyder, associate professor; Edwin Chapin Starks and Walter Kendrick Fisher, assistant professors.

The courses of instruction offered, with attendance, were as follows:

INSTRUCTOR	COURSE	Unit Hours		Attendance	
		Lect.	Lab.	1st Sem.	2nd Sem.
Price, Starks..	1. Elementary Zoology....	1	6	36	38
Fisher	2. Elementary Zoology, special		6	10	8
Heath	3. Invertebrate Anatomy..	1	6	4	4
Heath	4. Invertebrate Embryology		6		5
Heath	5. Invertebrates (Adv.)..		6-9	3	2
Heath	6. Microscopical Anatomy		6	1	
Fisher	8. Invertebrates (Spec. Syst.)		6-9	1	1
Snyder	9. Vertebrates (Class.)....		6	10	21
Snyder	10. Comp. Anat. Vertebrates		9	3	8
Price	11. Vertebrate Embryology	1	5	28	12
Starks	12. Ichthyology		6-9	4	3
Gilbert, Starks	13. Ichthyology (Adv.)....		12	1	2
Gilbert	14. Journal Club.....	2		3	5
Snyder	15. Special			1	2
				105	111

Professor Gilbert spent the summer of 1912 in the field, gathering data concerning the salmon migration and habits on the northwest coast, on behalf of the Fisheries Department of British Columbia. These were later elaborated, and form the basis of a report.

Professor Heath completed a monographic report on the Solenogastres of the North Atlantic, and commenced an investigation of certain molluscs, chiefly of economic importance, occurring along the coast of western North America.

Associate Professor Snyder continued his studies of the fauna of the lakes and streams associated with the quaternary Lake Lahontan. Through the interest of the United States Bureau of Fisheries two expeditions were made to the field. The specimens collected will serve as the basis for a report.

Assistant Professor Fisher continued the preparation and illustration of a report on an extensive collection of Philippine and East Indian starfish, collected by the United States Fisheries steamer Albatross, 1907-10, and prepared two preliminary papers covering new forms in this collection.

CHARLES HENRY GILBERT,
Professor of Zoology.

ENTOMOLOGY AND BIONOMICS

The faculty of the department in 1912-13 was composed of Vernon Lyman Kellogg, professor; Mary Isabel McCracken, assistant professor; Rennie Wilbur Doane, assistant professor and curator. David Starr Jordan gave lectures on Organic Evolution.

The number of major students was 18, of whom 4 were graduate students. Courses given were as follows, with attendance as indicated:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
McCracken ...	1 Elementary Entomology.....	3	21	24
McCracken ...	2 Morphol. and Phys. of In- sects	3	4	10
McCracken ...	3 Classif. and Devel. of In- sects	4	4	2
Doane	4 Econ. Ent. Coccidae.....	2-3	2	6
Doane	5 Econ. Ent. Forest Insects....	3	2	..
Doane	6 Econ. Ent. Orchard and Garden Insects.....	1-3	..	3
Doane	7 Econ. Ent. Adv. Lab. and Field	3-5	2	4
Doane	8 Insects and Disease.....	1-2	20	..
Kellogg	9 General Ent. and Insect Adaptations	2	..	28
Kellogg	10 Adv. Lab. and Thesis.....	3-5	6	7
Jordan, Kellogg, McCracken...	11 Organic Evolution.....	2	104	..
Kellogg	12 Man in Evolution.....	2	18	..
			183	84

Investigations were carried on during the year by Professor Kellogg on the biology of ectoparasites of birds and mammals; by Assistant Professor McCracken on heredity in silkworms (ninth year); and by Assistant Professor Doane on insects associated with disease. Professor Doane spent the summer (1913) in an investigation of the insects injuring the cocoanut palm in the Samoan Islands.

The following students' investigations may also be noted: By Frankie Willard, on the classification and life-history of the fungus gnats (Mycetophilidae); W. H. Smith, on the life-history and structure of the stable fly (*Stomoxys calcitrans*); Le Roy Childs, on the life-history and morphology of the pear scale (*Diaspis piricola*); V. G. Stevens, on the life-history of the currant borer (*Sesia tipuliformis*); S. Nakayama, on the life-history of the rose scale (*Hulacaspis rosae*).

VERNON LYMAN KELLOGG,
Professor of Entomology.

GEOLOGY AND MINING

The department faculty for the year 1912-13 consisted of Professors J. C. Branner, J. P. Smith; Associate Professors C. F. Tolman, A. F. Rogers, D. M. Folsom, G. H. Clevenger; Instructor H. W. Young; Acting Instructor H. T. Beckwith; and Curator in Geology C. H. Beal (first semester) and O. P. Jenkins (second semester).

Only minor additions to the equipment of the department were made during the year.

Professor C. F. Tolman of the University of Arizona was appointed as Associate Professor of Economic Geology to fill the vacancy left by the resignation of Professor N. F. Drake.

During the year Mr. Branner has prepared reports and papers giving the results of his geological work in Brazil. One of his papers appeared in the June number of the *American Journal of Science*, and another is published in the Proceedings of the American Philosophical Society of Philadelphia. Under his direction Olaf P. Jenkins has also prepared a paper on the geology of Rio Grande do Norte, Brazil.

During the summers of 1912 and 1913, Mr. J. P. Smith was engaged in field work for the U. S. Geological Survey on the Triassic stratigraphy of California.

Mr. Harold Hannibal spent the summer collecting in the Tertiary beds of Oregon, Washington, and California.

Mr. C. A. Waring studied the paleontology and stratigraphy of the Martinez formation.

Mr. E. C. Templeton made a geological and hydrographic study of the Gridley ranch.

The most notable change in the work of the department was the increased number of students taking advanced courses, involving research and field work.

The following table shows the courses given in the department during the year, and the attendance of students:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
GEOLOGY				
Branner	1 Elementary Geology.....	3	176	..
Branner	1a Physiography	1	..	48
Branner, Tolman	2 Economic Geology	2	..	60
Tolman, Beckwith ...	3 Topographic Geology	4	(Sum)	15
Waring.....	4 Field Geology	5	..	13
Rogers, Cooper	5 Mineralogy	3	30	31
Rogers, Cooper	Mineralogy	1	..	5
Rogers	6 Petrography	2	17	15
Smith	7 Elementary Paleontology....	4	17	17
Smith	8 Research in Systematic Pale- ontology and Strati- graphy	2-5	8	5
Rogers	9a Paragenesis of Minerals ...	2-3	8	..
Rogers	9 Advanced Mineralogy.....	2-4	..	6
Smith	10a Geologic History of the Great Basin	2	12	..
Smith	10b Geologic History of Califor- nia	2	..	9
Branner, Tolman	11 Special courses	2	16	..
Tolman	11a Advanced Course in Ore Deposits	3	..	8
Branner, Tolman	11 Special Courses.....	1-10	..	9
MINING AND METALLURGY				
Folsom	1 Mining Methods.....	5	21	..
Folsom, Clevenger ..	2 Ore Dressing.....	2	..	13
Folsom.....	4 Mining Machinery	3	..	19
Folsom	5 Advanced Ore Dressing.....	2	3	..
Folsom	6 Mine Engineering and Mine Costs	2	..	4
Folsom, Beckwith....	7 Thesis	2-3	3	10
Clevenger, Young	8 General Metallurgy	4	..	28
Clevenger	9 Metallurgy of Constructive Materials	2	58	..
Clevenger	10 Metallurgy of Gold and Silver	2	20	..
Young	a General Metallurgy Labora- tory	2	..	3
Young	b Metallurgy of Gold and Sil- ver (Lab.).....	3-4	7	..
Clevenger	c Metallography	2	1	..
Clevenger	d Metallurgical Research	2-4	2	..
			399	318

CIVIL ENGINEERING

During the year 1912-13 the work of the Department of Civil Engineering has been continued along the lines that past experience has proved to be best adapted to conditions both within and outside the University. There continues to be an increasing demand for fifth-year work. This demand has been met by special courses in the department and in departments whose work is closely allied to that of Civil Engineering.

The following courses have been given during the past year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Fish and Assistants ..	1a Linear Drawing and Letter- ing	1	57	6
Fish, Brown and Assistants ..	1b Descriptive Geometry.....	1-4	83	77
Wing and Assistants....	2 Mechanics of Materials,.....	5	77	..
Hoskins	3a Hydraulics	3	..	64
Hoskins	3b Hydraulic Motors.....	3	19	..
Fish and Assistants ...	4a Elem. Surveying.....	5	52	..
Fish and Assistants ..	4b Elem. Surveying.....	2	19	3
Fish and Assistants ..	6a Railroad Surveying.....	5	..	27
Fish and Assistants ..	6c Railroad Construction.....	1-2	..	8
Fish and Assistants ..	6d Engin. Economy.....	2	23	..
Wing, Moser and Assistants ..	8a Elements of Design.....	3	38	..
Wing, Moser and Assistants ..	8b Elements of Design.....	5	..	39
Wing and Assistants ...	8c Elements of Design.....	3-2	15	15
Wing and Assistants ..	9 Railway Bridges.....	5	21	20
Marx	12 Water Supply.....	5	31	..
Marx	12 & 13 Advanced Water Supply and Sanitary Engin.	5	8	..
Marx	13 Sanitary Eng.	5	..	25
			443	285

The hearty co-operation of the departments of Geology and Mining, and Chemistry and Bacteriology has been greatly appreciated.

The plans prepared last year for the development of the department laboratories are being carried out, and it is hoped that the mechanics of materials laboratories will be ready for occupancy by September 1, 1913. The equipment for the elementary hydraulic laboratory and the power hydraulic laboratory are now being prepared by Professor Eckart, and these laboratories will be ready for occupancy in January, 1914.

More laboratories have long been needed, and the use of those now provided will greatly strengthen the work of the Department.

CHARLES DAVID MARX,
Professor of Civil Engineering.

MECHANICAL ENGINEERING

The teaching force in the department for the year 1912-13 was as follows: William Frederick Durand, professor of Mechanical Engineering; Guido Hugo Marx, professor of Machine Design; William Rankine Eckart, professor of Experimental Engineering; Everett Parker Lesley, assistant professor of Mechanical Engineering and superintendent of shops; Charles Norman Cross, assistant professor of Experimental Engineering; Lawrence Edminster Cutter, instructor in Drawing; Clarence P. Campbell, instructor in Mechanical Engineering; Edward John Stanley, instructor in Woodworking and Pattern Making; James Bennett Liggett, instructor in Foundry; Theron James Palmateer, instructor in Machine Shop; Robert Henry Harcourt, instructor in Forge Shop.

During the first semester 999 student hours of instruction were given by 10 instructors, or an average of 99.9 per instructor. The similar figures for the second semester are a total of 1,212 student credit hours, and an average per instructor of 110.

The policy of adding some valuable items of general equipment in the shops and laboratories has been followed by the purchase of a new radial drill for the machine shop. In addition to this machine tool, various other auxiliary and smaller items of equipment have been added.

The general work of the year was carried out in accordance with the regular program of classes, laboratory and shop exercises. The classes taught and numbers in attendance are shown in the following tabular presentation:

INSTRUCTOR	COURSE	Kind of Work	Hours Credit	Atten- dance	
				1st Sem	2nd Sem.
Harcourt	1a, 1b	Lect. and Shop	1-3	67	49
Liggett	3a, 3b	Lect. and Shop	1-3	36	31
Stanley	5, 6a, 6b	Lect. and Shop	1-3	57	75
Palmateer	7a, 7b, 8	Lect. and Shop	1-3	25	36
Lesley	10.	Lecture	2		10
Lesley	a Industries	Lect. & Special	1	4	4
Cutter	11. El. Mach. Drawing	Drawing	2 or 3	50	29
Marx, G. H. ...	13a. El. Mach. Design..	Lect. & Rec....	3		35
Marx, G. H. ...	13b. El. Mach. Design..	Drawing	2		32
Marx, G. H. ...	14. Machine Design.....	Lect. and Draft	4	5	5
Marx, G. H. ...	15. Machine Design	Lect. and Draft	5	2	
Marx, Cutter..	16. Adv. Machine Design	Lect and Draft	3	4	
Marx, Cutter..	a Industries	Lect. & Special	1	8	9
Eckart, Cross..	21. Calibration and Use of Instruments...	Lect. and Lab.	3	13	
Eckart, Cross, Campbell ...	22. Testing of Engines	Lect. and Lab.	3		22
Eckart, Cross	23. Testing of Power Plant Auxiliaries	Lect. and Lab.	3	4	
Eckart, Cross, Campbell ...	24. Abridged Course in Experimental En- gineering	Lect. and Lab.	3		45
Eckart	25. Advanced Course in Engineering Prob- lems	Laboratory ...	3-5	1	1
Eckart	Thesis	Laboratory ...	4		1
Cross	a. Industries	Lect. & Special	1	4	4
Eckart	a. Industries	Lect. & Special	1	4	4
Durand	31. Heat Engines	Lect. and Office Work	3	71	
Durand, Campbell ...	33. Heat Engines	Lect. and Office Work	3		23
Durand	34. Thermodynamics ...	Lecture	1		3
Durand	35. Power Plants	Lecture	2	23	
Durand	35. Hyd. Power Plants	Lecture	2	3	20
Durand	36. Pumping Machinery.	Lecture	2		40
Durand	37. Seminary	Lecture	1	7	9
Durand	a. Industries	Lect. & Special	1	5	5
				393	492

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

ELECTRICAL ENGINEERING

The staff of instruction in the department was made up as follows: Professor Harris Joseph Ryan, Acting Assistant Professor James Cameron Clark, and Instructor Axel Nielsen.

The courses of instruction given and the corresponding attendance in such courses are tabulated below:

INSTRUCTOR	COURSE	Unit Hours	Kind of Work	Attendance	
				1st Sem.	2nd Sem.
Ryan, Clark ..	1. Elements	4	Lec. & Lab. Exercises	31	
Clark	1. Elements	4	Lec. & Lab. Exercises		7
Nielsen	2a. Energy	1	Class	19	
Nielsen	2a. Energy	4	Class		20
Clark, Nielsen.	2b. Energy	4	Lab.		18
Ryan	3a. Practice	4	Lec.	23	
Ryan	3a. Practice	2	Lec.		23
Clark, Nielsen.	3b1. Machinery	4	Lab.	23	
Nielsen	3b2. Machinery	3	Class	23	
Ryan	3c. Design	4	Class		21
Ryan	10. Adv. Work			2	
				<hr/> 121	<hr/> 89

During the present university year the department of Electrical Engineering reorganized its instruction, use of equipment, and work of research, in recognition of the following facts:

Electricity has now entered widely into industrial life as a fundamental necessity. Because of their inherent facilities and economic advantages, electrical methods have become extensively standardized for practical purposes. Such methods are open to free employment by all engineers and industrial experts. Men of this class are using electricity with great advantage in their respective industries. To do so they require only a limited training in electrotechnics. These facts have controlled in determining the character of work that the greater portion of the electrical engineering graduates find to do.

In the "early nineties" numbers of men were trained for the first time in universities to become electrical engineers. Such men have now been at work twenty years or more. Only a few of them have found professional electrical work to do as such. The great majority have taken up the newer lines of work of the mechanical, civil, manufacturing,

chemical and metallurgical engineer, wherein the uses of electricity are made to play an important part. Among these, the work of the mechanical engineer is now quite generally dominated by the applications of electricity. In fact, the electrical industries themselves constitute perhaps the largest section of the field covered by the present day mechanical engineer.

The past twenty years bring also the lesson that progress in the electrical industries is quite dependent upon a comparatively few men, who devote successfully all or nearly all of their available energies to the characteristic technical work of the electrical engineer. These are men of peculiar fitness for such work, which, to be successful, must clearly benefit some important division of the electrical industry. Men are called to this work of high character by their natural fitness, and they can prepare for it only through ample technical education and professional training. This class of young men requires for a foundation the same training as that required by the rank and file of electrical engineers. Besides they require an additional year of specialized instruction, study and investigation. Otherwise they are handicapped at the outstart by lack of the mental equipment that is especially adapted to their purposes,—an equipment that must then be provided by the slow and less successful method of isolated self-making. Accordingly a fifth-year curriculum has been developed to meet satisfactorily the needs of this class.

The department now offers courses of instruction and maintains a curriculum as specified below:

Course E. E. 1. Elements of Electrical Engineering.—An abridged course in the industrial applications of electricity is open to all students in engineering, with no prerequisite restrictions except that such students shall be seniors. Instruction in this course is confined to fundamentals and well settled practice; it is based upon laboratory exercises, demonstrations and lectures, and is given in terms that are familiar to all of the above majors.

Courses: Physics 9, Electrical Measurements; E. E. 2a and 2b, Electrical Energy; and E. E. 3a, b and c, Electrical Engineering, heretofore required for students majoring in the department, have now been adapted primarily to the needs of those students in electrical and mechanical engineering whose practice will be in the mechanical industries that are quite generally dependent upon well established electrical methods. In doing this, these courses have been abridged, in effect, so as to eliminate analytical material of a highly technical character. The courses provide a well balanced electrical training for those who will be graduated after four years of study to go into mechanical and electrical engineering practice.

Heretofore the rank and file of students in mechanical and electrical engineering have been somewhat under-trained in the standards of practice that have been established in electrical engineering, while they have

been correspondingly over-trained in analysis, methods of investigations, and the tools that in general belong to the man of great technical power. The changes here reported will correct these misfits. They have established an identity between the curricula in mechanical and electrical engineering covered by the first four years. Such being the case, both classes of students will major in the Department of Mechanical Engineering during the first four years.

For those who will be drawn into the advanced electrical engineering practice or working technology by virtue of their natural talents, the department has arranged the following fifth-year curriculum:

In the Department of Applied Mathematics: Differential equations, hyperbolic functions, and determinants; in Physics: recent advances in electrophysics; and in Electrical Engineering: advanced electrotechnics by mathematical analysis and by laboratory study, technology of general practice, seminary for the review and study of leading professional papers, and a thesis based upon original investigation or research. Fifth-year students in Electrical Engineering will major in this department. Upon successful completion of the fifth-year curriculum, students will be granted the degree of Engineer in Electrical Engineering.

Two successful types of potentiometer have been developed for the determination of the potentials of the elements of high-voltage insulators and insulating media. There has long since been a general need of facilities of this sort for the conduct of certain desirable studies in the field of high-voltage practice and progress.

Mr. C. F. Elwell, Stanford E. E. 1907, Chief Engineer of the Federal Telegraph Co., early in the year presented the University, for the use of the department, a five-kilowatt Poulsen arc high-frequency oscillating current generator. With aid of this generator, laboratory research studies were made during the year that resulted in the development for the department of a sustained high-frequency high-voltage source of 1000 kilovolt-amperes of reactive power delivered at 100,000 volts and 150,000 cycles per second. The equipment will be employed in the future for the investigation of some of the obscure causes of failure of high-voltage insulators, and for the general purposes of instruction and investigation.

HARRIS JOSEPH RYAN,
Professor of Electrical Engineering.

MEDICINE

The year 1912-13 was the first in which the complete curriculum leading to the degree of Doctor of Medicine was given by the Medical Department. Seven men were granted that degree in May, 1913.

Fifty-three students registered in Medicine during the year. Of these there were in the fourth year ten, in the third year eight, in the second year fourteen, and in the first year twenty-one. There have been a num-

ber of additions to the faculty. Dr. A. W. Hoisholt has been made clinical professor of Medicine, assigned to Psychiatry; and Dr. R. G. Brodrick assistant clinical professor of Hygiene and Public Health.

During the year the medical faculty modified the curriculum for the four years in Medicine, reducing the number of required hours and increasing the number of optional subjects, particularly in the senior year. The faculty has arranged for the addition of a fifth interne or practical year to the Medical curriculum before granting the degree of Doctor of Medicine, this to take effect with students entering the Department of Medicine in 1914.

On July 1, 1912, Lane Hospital and all of the clinics were definitely transferred from Cooper Medical College to the Stanford University Medical Department. Arrangements were made centralizing the business of the hospital and the Medical Department in San Francisco.

The Division of Pharmacology has been transferred from the campus to the fifth floor of the clinical and laboratory building, occupying a new laboratory in the rooms formerly used for topographical anatomy, which has been moved to the campus.

The alterations begun in the clinical and laboratory building have been completed, the first two floors now being devoted entirely to clinics, and the upper three floors to laboratories. This rearrangement, together with the conversion of Lane Hall into an amputheatre, is very satisfactory, and provides facilities for handling the rapidly growing clinics. About 70,000 visits is the record for the year ending June 30, 1913.

The Stanford Medical Department, together with that of the University of California, has completed an arrangement with the Associated Charities for the Fruit and Flower Mission, by which their clinic has been given up and its patients will be sent to the University clinics. Mrs. Kate Felton Neilson provided a gift of \$300 for the free care of cases in the medical ward. Mr. Felton Elkins has given \$900 for the salary of an obstetrical nurse, and others have contributed to the care of clinic patients. Mr. C. A. Coffin of New York added \$250 to the Research Fund for Tropical Diseases. Efforts are being made toward the organization in San Francisco of a psychiatric clinic in association with the new San Francisco Hospital which will be opened January 1, 1914.

The opening exercises of the new Lane Medical Library Building were held on November 3, 1913. Addresses were given by Mr. Timothy Hopkins, Dr. Emmet Rixford and President David Starr Jordan. This new building has contributed greatly to the success of the Medical Department. The Library has fifty life members at present, and several special funds have been established.

The Popular Medical Lectures, a continuation of the Lane Popular Medical Lectures, were given during the second semester in the new Lane Hall, and were very well attended. Professor Schäfer, of the University of Edinburgh, has been appointed Lane Lecturer for the Medical Lectures of September, 1913.

The Jordan Scholarship Loan Fund, organized by Alumni and others interested in Medicine, has provided for two scholarships during the year, which were held by Harry A. Wyckoff and Clyde T. Wetmore.

Following is a detailed statement from the individual divisions of the Medical Department, including Lane Hospital. No reports are included for the Divisions of Physiology and Histology, Chemistry and Zoology, since these are included in their regular departmental reports.

ANATOMY

The courses in human anatomy were given by Frank Ellsworth Blaisdell in San Francisco and by Edgar Davidson Congdon and the undersigned at Stanford University. A list of the courses given, with attendance in each, is found in the accompanying table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2nd Sem.
Blaisdell	Topographical and Applied Anatomy	3	..	15
Congdon, Meyer	Dissection	2-5	37	28
Meyer	Osteology	2-3	19	..
Congdon, Meyer	Conferences and Topographical Anatomy*	3	4	4
			<u>60</u>	<u>47</u>

* Open only to students who have completed their dissections.

The above table indicates an apparent decrease in the enrollment in anatomy for the current year. This is in part due to the fact that certain non-medical students, who are juniors in the University, were discouraged from taking dissections, and chiefly to the fact that the courses heretofore listed separately as conferences and topographical anatomy were combined and limited to those who had finished or who were finishing their dissections. This prerequisite excluded 38 students.

The total number of different individuals taking work in anatomy during the year was 53, 12 of the total number being women.

It is interesting to note that in spite of the lower percentage of women in attendance at Stanford as compared to the men, the number enrolled in Anatomy is unusually high. Since the percentage has been high during four years in spite of the lower percentage of women at Stanford, it is a peculiarly interesting fact.

ARTHUR WILLIAM MEYER,
Professor of Anatomy.

BACTERIOLOGY

During the past year the teaching staff of the department consisted of Hans Zinsser, professor, and Arthur Meinhard, technical assistant. During the first semester the department used also Mr. Clyde Wetmore as student assistant; and throughout the year, Mr. Harry J. Sears, a graduate student, fulfilled many of the functions of instructor.

The courses given in the department were as follows:

1. A general laboratory course on bacteriological technique and the pathogenic bacteria; 7 hours of lecture and laboratory per week, 4 units; attended by 17 students.

2. A course of lectures and demonstrations on immunity; 2 lectures per week, 2 units; attended by 17 students.

3. A course of lectures and laboratory work on practical serum study; 2 full afternoons per week, with extra time on other afternoons according to the ability of the student, 3 to 4 units. This course was for advanced students only, and was attended by 2 physicians and 7 advanced students.

4. A seminar for advanced students in which recent problems of immunity were discussed and reports submitted; 1 unit; attended by 5 students.

In addition, there were 6 students at work in the laboratory on special problems.

A short course of six lectures and demonstrations on water bacteriology was given during the second semester to engineering students at the request of Professor Charles D. Marx.

Experimental work was carried on by the department staff and by advanced students on various subjects, the papers published by the department during the year occupying themselves chiefly with problems of anaphylaxis and the precipitin reaction, though several short communications on the colloidal nature of serum reactions were published from this department in collaboration with Professor Young of the Department of Chemistry.

The most interesting undertaking of the department during the year was the attempt to give a practical course on the technique of serum work in which the students carried out all procedures themselves, beginning with the care and immunization of animals. learning to standardize antitoxins, carrying out the basic experiments of Ehrlich and of Bordet, complement-fixations, etc. Although this course showed a number of defects, the general result encourages us to believe that the conditions at Stanford, because of the generous space, surroundings, etc., are peculiarly well suited for this kind of teaching.

HANS ZINSSER,
Professor of Bacteriology.

MEDICINE

The teaching staff of this division consisted of Ray Lyman Wilbur, professor; William F. Cheney, Langley Porter, Andrew W. Hoisholt, clinical professors; Harold Hill, Harry E. Alderson, associate clinical professors; Thomas Addis, assistant professor; Walter W. Boardman, William R. P. Clark, Emanuel C. Fleischner, Morton R. Gibbons, Florence M. Holsclaw, Walter F. Schaller, Herbert H. Yerington, clinical instructors.

The outpatient medical clinic was conducted by Dr. R. L. Wilbur, First Assistant P. H. Luttrell, and Assistants W. R. P. Clark, W. H. Banks, H. F. Adler, H. Gunn, and K. J. Staniford.

The students were given practical instruction in the outpatient clinic and in the wards of Lane Hospital under Dr. Wilbur and Dr. Cheney, and in the medical wards of the San Francisco Hospital under Dr. Harold Hill and Dr. R. B. Tupper. The total number of patients for ten months in the medical service, not including those in the San Francisco Hospital, was 2,602, distributed as follows:

Outpatient clinic	2,133
Tuberculosis clinic	41
Ward at Lane Hospital	428

The re-arrangement of the clinical and laboratory building provided excellent outpatient arrangements for the Medical Division, and the close association between the medical ward and the outpatient service proved of great value in teaching. The new Clinical Laboratory has been placed in close association with the students' room, thus facilitating the opportunity for the students to readily keep in touch with hospital and clinical patients.

Dr. Porter was in charge of the children's clinic, which was very well attended. The total number of cases for the year was about 1600. He was assisted by Drs. Fleischner, M. R. Gibbons, F. M. Holsclaw, H. H. Yerington, L. D. Mead, A. Huffaker, R. H. Morris.

The clinic upon diseases of the skin was conducted throughout the year by Dr. Harry E. Alderson, who gave the first instruction upon this subject to Stanford students and who had in ten months 661 patients.

The neurological clinic was in charge of Dr. Walter F. Schaller, assisted by Drs. J. M. Wolfsohn, R. G. Van Nuys and J. R. Dillon. The total number of patients for the year was 600, and included numerous rare and instructive diseases.

A number of clinical papers have been published by instructors in this division during the year. The experimental work of Drs. Wilbur and Addis on urobilin has been continued.

Report of the President

59

The following courses were given :

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2nd Sem.
Wilbur, Addis, Boardman ..	1. Physical Diagnosis	4½	..	14
Wilbur	2. Physical Therapeutics.....	2	..	14
Wilbur, Cheney, Boardman, Addis	3. Medicine, Section Work and Clinics	11	8	..
Wilbur, Cheney, Addis	4. Medicine, Section Work and Clinics	7	..	8
Wilbur, Addis ..	5. Experimental Medicine	2½	8	8
Addis	6. Clinical Pathology.....	2½	8	8
Porter, Yerington, Fleischner ..	7. Pediatrics	2	..	7
Schaller	8. Nervous Diseases.....	2	..	8
Wilbur	9. Ward Work and Clinics, Lane Hospital	5	6	4
Hill	10. Ward Work and Clinics, San Francisco Hospital	6	4	4
Schaller	11. Neurology	1	6	4
Schaller	12. Neurology, (S. F. Hosp.)....	2	4	4
Porter, Yerington ..	13. Pediatrics	4	4	4
Porter	14. Pediatrics	2	10	8
Hoisholt	15. Psychiatry	1	..	9
Alderson	16. Dermatology and			
	17. Syphilis	1½	10	8
Ophuls, Stillman, Spalding, Snow, Wilbur	18. History of Medicine.....	1	10	..
Law Faculty and Ophuls, Spalding, Stillman, Wilbur	19. Jurisprudence	1	..	..
Wilbur	20. Dietetics	1	..	8
			78	120

RAY LYMAN WILBUR,
Professor of Medicine.

OBSTETRICS AND GYNECOLOGY

During the year 1912-13 the teaching has been done by Alfred Baker Spalding, professor; Walter H. Gibbons, clinical instructor; and Chester B. Moore, clinical assistant. The patients in the outpatient women's clinic, numbering for the past year 4,341, have been attended by Professor Spalding, Instructor Gibbons, and Assistants F. P. Topping, S. O. Beasley, G. A. Wood, and C. B. Moore.

The following courses were offered:

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2nd Sem.
Spalding	1. Obstetrics	3	8	8
Spalding, Moore	2. Practical Obstetrics, Outdoor Confinements	each 2 w'ks	8	1
Gibbons	3. Gynecology	1	9	9
Spalding, Gibbons	4. Gynecology, Clinics and Sec- tion Work	2	9	9
			34	27

Three physicians have registered as special workers in the laboratory and have been conducting a series of observations upon the excretions of pregnant women, as a basis for a paper upon the toxæmias of pregnancy. One graduate has been working in the outpatient clinic as a special worker. Dr. Somers has continued with Dr. Blaisdell of the anatomical division a study of the sacro-uterine ligaments. Dr. Spalding has completed a second paper on the value of certain abdominal measurements in abnormal pregnancy.

ALFRED BAKER SPALDING,
Professor of Obstetrics and Gynecology.

PATHOLOGY

The personnel of the division was made up of William Ophüls, professor; Ernest C. Dickson, assistant professor; Edgar D. Downing, assistant.

Professor Ophüls continued his experimental studies on chronic lead poisoning in guinea-pigs, and made reports on this subject to the Society of Experimental Biology and Medicine. A report was prepared on the relation of vascular lesions to gastric and duodenal ulcer.

Professor Dickson published additional reports on experimental

uranium nephritis. He also prepared several shorter reports and demonstrations for various local medical societies.

Dr. S. L. Haas continued his work on regeneration of bone, and sent a communication in regard to this subject to the Society of Experimental Biology and Medicine. He also finished a more elaborate report of his work, which is to appear shortly in one of the surgical journals.

Dr. E. V. Knapp undertook some work on experimental anaemia, and Mr. J. R. Oliver has been studying the results of vital staining of the tissues in experimental nephritis.

The following table shows the courses given in the division during the year, and the attendance of students:

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2nd Sem.
Ophüls, Dickson	1. General Pathology	5	..	14
Ophüls, Dickson	2. Pathological Histology.....	7½	..	14
Ophüls, Dickson	3. Special Pathology.....	4	8	8
			8	36

WILLIAM OPHÜLS,
Professor of Pathology.

PHARMACOLOGY

The work in this division was conducted by Professor Albert C. Crawford, assisted by students. Eleven students were registered in the laboratory and lecture courses during the first semester, and 16 during the second semester. In the second semester 2 of these were at work at Stanford and the rest in San Francisco.

During the year a preliminary paper was issued from this division entitled "Notes on the Cock's Comb Test for the Activity of Ergot Preparations."

During the next academic year the pharmacological work will be in San Francisco.

ALBERT C. CRAWFORD,
Professor of Pharmacology.

SURGERY

The personnel of the division for the year has been as follows: Stanley Stillman, Emmet Rixford, professors; Adolph Barkan, professor emeritus; Rufus L. Rigdon, clinical professor (genito-urinary); Albert B. McKee, clinical professor (ophthalmology); Edward C. Sewall, clinical professor (otology, laryngology, rhinology); H. B. Graham, assistant clinical professor (otology, laryngology and rhinology); James Eaves, instructor; and Leo Eloesser and Sol Hyman, clinical instructors.

The following table shows the courses given during the year:

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2nd Sem.
Eloesser, Eaves	1. Fractures, Dislocations, De-	2	..	14
Stillman,	formities			
Eaves	2. General Surgery.....	2½	14	..
Stillman,				
Rixford	3. Regional Surgery.....	3	8	8
Eaves	4. Surgical Pathology.....	4	8	8
Stillman	5. Clinic and Section Work....	4	8	8
Stillman	6. Surgical Ward Work and			
Rixford,	Clinics, Lane Hospital...	3	8	..
Eloesser ...	7. Surgery, Ward Work and			
	Clinics, S. F. Hospital...	4	..	8
			46	46

The surgical material in the wards of Lane Hospital and the out-patient clinics afforded abundant and varied material for bedside instruction in diagnosis and history taking.

The splendid new quarters provided during the year in the clinical building for the surgical clinic and the surgical special were greatly appreciated, both by the students and patients. The total number of cases treated in the surgical clinic during the past eleven months was 6,418, of which 1,590 were new. The total number of patients maintained in the surgical ward of Lane Hospital during the same period was 290, most of which were operative cases. The clinic was under the charge of Professor Stillman, assisted by Drs. W. H. Winterberg, C. E. Hyde and S. L. Haas.

In genito-urinary surgery, Clinical Professor R. L. Rigdon gave the course of instruction and was in charge of the clinic. He was assisted by Drs. Chester H. Woolsey, Frederick M. Gedney and Howard Somers. The total number of visits at this clinic was 9,670, of which 714 were

new. This material was sufficiently varied and abundant for teaching purposes.

In ophthalmology the instruction was in charge of Clinical Professor Albert B. McKee, assisted by Drs. J. R. Burrows, A. S. Green and A. E. Peck. The total number of cases treated in the clinic was 8,630, of which 1,968 were new.

In otology, laryngology and rhinology the clinic and instruction was conducted by Assistant Clinical Professor H. B. Graham, assisted by Drs. George P. Wintermute and H. Y. McNaught. The total number of cases treated in the clinic was 6,853, of which 1,910 were new.

In orthopedic surgery instruction was given by Professor Emmet Rixford, who was also in charge of the orthopedic clinic, assisted by Dr. Arthur M. Fisher.

An optional course on the cadaver was given by Instructor James Eaves.

The surgical pathological laboratory is being enlarged and by the middle of summer will be completed, affording ample opportunity for research work.

Clinical Instructor Sol Hyman resigned from the division, and Instructor Eaves resigned from the position of instructor to take that of clinical instructor.

STANLEY STILLMAN,
Professor of Surgery.

LANE HOSPITAL

On July 1, 1912, Lane Hospital came under control of Leland Stanford Junior University. The present report, dated June 1, 1913, covers only eleven months of Stanford administration.

The staff of the Hospital appointed for the first year was as follows: George B. Somers, physician superintendent; Dr. W. W. Boardman, actinographer; Dr. H. R. Oliver, serologist; Dr. C. B. Palmer, chief anesthetist; Dr. Robert Burrows, assistant anesthetist; Miss Marie Jorgensen, social service worker; Mr. Otto Mausert, druggist; Mr. Irving Schwartz, assistant druggist.

The senior internes in the Hospital are James A. Cutting, in medicine; Edmund Butler, in surgery; and Lester O. Kimberlin, in obstetrics and gynecology.

The junior internes for the year were Lovell Langstroth, Frederick W. Kroll, Leland W. O. Moore, Warren McNeill, Adolph Schmidt and Leo Stanley.

Drs. Dewey R. Powell and Chester B. Moore were doing work in the hospital as externes.

Miss Annie Engel acted as cashier, and Miss Henrietta Suter as receiving clerk.

The training school staff consisted of Miss Harriet F. MacArthur, R. N., superintendent of nurses; Miss Florence Sperry and Miss Hermanda Joost, assistant superintendents; Miss Hattie M. Visser, head nurse of operating room; and Miss Lottie B. Sloan, instructor in dietetics.

Since July 1, 1912, the average daily number of patients treated in Lane Hospital was 125.77, divided as follows: Private, 54.12; Clinic, 57.25; Associated Charities, 3.3; San Francisco Maternity, .9; Free Clinic patients, 10.2. The total number of new patients received from June 1, 1912, to June 1, 1913, was: patients admitted, 3,462; patients discharged, 3,182; patients died, 177; remaining June 1, 1913, 103.

During the past year, many changes have been made in the service looking toward improving the care and comfort of patients, nurses and employees. The present accommodations are inadequate for the steadily increasing number of both private and clinic patients seeking admission. Accordingly, the staff is looking forward with pleasure to the plans of the Board of Trustees whereby a new pavilion, new equipment, and new quarters for nurses will be added.

The hospital management is much pleased to acknowledge the provision made by the Board of Trustees for issuing an annual report. The First Annual Report of Lane Hospital has appeared, and has been in considerable demand. While it covers the year preceding Stanford control, yet it gives an interesting outline of the character of our work and affords a beginning in hospital statistics and records for future comparison.

Miss Harriet F. MacArthur of the Presbyterian Hospital, New York, assumed the duties of superintendent of nurses, October 1, 1912. Systematic instruction has been given by instructors selected from the clinical staff of the outpatient department. This has been supplemented by practical demonstration given by the superintendent of nurses and her assistants. The average number of nurses enrolled during the year ending June 1, 1913, was 76.4. Their work was divided as follows: general duty, 45.7; night duty, 11.5; operating room, 7.1; clinics, 5; diet school, 5; special duty, 2.1. A large number of graduate nurses is employed for the care of private patients. The average daily number in the hospital for the year was 9.5.

In the operating room the number of operations on private patients performed during the year ending June 1, 1913, was: major, 407; minor, 736; casts, 76; cystoscopic examinations, 68; examinations, 34; surgical, 337; orthopedic, 80; genito-urinary, 177; gynecological, 168; eye, ear, nose and throat, 350.

Under Dr. W. W. Boardman, the X-Ray department has done a very large amount of work. The records show that since June 1, 1912, 743 patients were examined, 1,227 plates taken and 61 photographs taken.

Under the care of Dr. A. B. Spalding, the obstetric service has steadily advanced. It was divided into indoor and outpatient services. The obstetrical ward was under the management of Miss Gertrude

Wilkins, who has done much to raise the efficiency of the ward to a high standard. Her resignation, taking effect June 1, 1913, was received with regret. Her successor, Miss J. G. Coon, has been trained in the service and gives promise of keeping up the high standard set in this department. This department is a source of much interest to the many friends of the institution. Recently, Mr. Felton B. Elkins generously gave \$900 for the salary of the head nurse for one year. From time to time, the ladies of the San Francisco Maternity and their friends send various articles of clothing, etc. for the patients confined in this ward. The outpatient service was under control of Dr. C. B. Moore and Miss Anne Hill. Pupil nurses are regularly sent out under the care of Miss Hill for the institution. The department accomplished much good and is deserving of every support in its work of caring for the sick poor in their homes.

The outpatient department is rapidly growing in size. The new and commodious quarters provided by the rehabilitation of the clinical and laboratory building are of much convenience and comfort to the patients attending the clinic as well as to the clinicians.

During the past year, the outpatient department showed an attendance of 11,135 new patients and 43,613 visits of old patients.

The recently acquired social worker, Miss M. Jorgensen, is a valuable addition to the clinic work. She has had her training in the service of the Associated Charities, and still keeps in touch with that organization in her work with us. A fine desk and equipment for her work has been provided by kindness of Mr. Charles G. Lathrop. The inauguration of social work in our clinics is received with much satisfaction. Miss Jorgensen is in a position to be of the greatest service to the deserving poor at just the time when they are most in need—namely, when stricken with sudden sickness, or in need of hospital treatment and unable to afford the expense. She has also at her command a list of physicians who are always willing and ready to make visits in the homes of the poor whenever called upon.

New quarters have been provided for the history room and a new system installed. The records of both private and clinic patients are indexed, carded and filed, rendering them accessible whenever needed. The successful solution of the many problems involved in this work is largely due to the active interest of Drs. Emmet Rixford and W. W. Boardman. The custodian of histories, Miss L. Bugeia, is carrying on the work in a very satisfactory manner. It is planned to have also for the coming year an assistant custodian and a messenger to deliver and collect the histories from various departments.

GEORGE B. SOMERS,

Physician Superintendent.

MARINE BIOLOGICAL LABORATORY

The twenty-second session of the Marine Biological Laboratory at Pacific Grove began on Tuesday, May 27th, and continued for six weeks, closing on July 8th.

The laboratory was in charge of Professor Frank M. McFarland, aided by Mr. Frank J. Smiley, assistant in general zoology; Mrs. Olive H. McFarland, assistant in embryology and microscopical technique; and by Mr. Forrest E. Boyd, as laboratory attendant.

Twenty-five students were in attendance, pursuing the following courses, which are described in detail in the University Register and in the annual circular issued by the laboratory:

Course 1. General Marine Zoology.....	12 students
Course 2. Advanced Marine Zoology.....	7 students
Course 3. General Embryology	6 students

Each of the above courses consisted of a minimum of 7 hours per day of laboratory work, with frequent lectures and collecting trips.

Aside from members of the University faculty, no investigators were in attendance during the session.

FRANK MACE MCFARLAND,
Instructor in Charge.

APPENDIX II

REPORTS OF COMMITTEES

STUDENT AFFAIRS

The exercise of self-government by the students throughout the full year has been a notable event. The faculty committee has held but few meetings, the student committees thus having opportunity to feel, full responsibility and to exercise full control. Conferences between the chairmen of the student committees and the chairman of the faculty committee have been frequent, and usually at the initiative of the students.

The attitude of the student committees is well expressed in the reports of their chairmen. Mr. Eugene Kern, for the Men's Student Council, says: "The Council throughout the whole year has tried to maintain the general standard of good conduct that existed before student control"; and Miss Ileen Bullis, for the Women's Student Council, says: "In so far as we have been able, we have attempted to faithfully carry out the ideals and aims of our predecessors."

Chairman Kern closes his report with these words, which express the impression of the year's work from the student point of view: "Student control certainly has been a success during the past year, and, as stated before, this is due entirely to the fact that the students of the University have realized that it is their own government, and have earnestly endeavored to maintain a high standard of conduct among themselves."

From the faculty point of view the earnest purpose of the students to maintain high standards is unquestioned. The skill shown by the committees in announcing their policies, and in securing the cooperation of the whole student body in the establishment of traditions of high standards of conduct, has been most admirable, and much has been actually accomplished. The student officials have done hard and faithful work. They have exhibited sterling qualities of character. The University is grateful for what has been done. It is not an easy or agreeable task for students to recommend fellow students for suspension from the University permanently or even temporarily, and yet this is what student self-government means in some cases.

While appreciating fully the work that has been done so far, and giving to it its just mead of praise, it is necessary to point out certain sources of danger. So far as the government of the women is con-

cerned, standards have been fully maintained and no anxiety in that direction need exist. With the men the task of control is much more difficult, and extreme vigilance is necessary to make the future assured. It is doubtless true that there has been less surreptitious use of liquor on the campus, but it is also possible that there has been more such use away from the campus. There is reason to think that outside drinking exists as a student custom. A custom or tradition of student drinking on the campus or off it is sure to bring disaster. Such a custom should be combatted wherever it exists. The student "carnival" given this year contained features for which men students were responsible, and which were unworthy of the University and its student body. These features student government should control, either by preventing them from occurring or by effective punishment when they do occur.

It is possible that the men themselves recognize the presence and force of these criticisms. If so, they will be corrected. To make student government permanent and successful these and other similar weaknesses must be overcome. Both the students as a whole and the student officials must be wide awake to their duties and responsibilities and meet them squarely. If either the student body or its officials fail to do this, student control will not endure.

At the same time the benefits arising from student control so far have been great despite limitations. There has been created an era of student-faculty good feeling, and student control has demonstrated its value in character building. We may hope that it will grow in efficiency with added years of experience.

ARTHUR BRIDGMAN CLARK,
Chairman.

COMMITTEE ON DELINQUENT SCHOLARSHIP

The records of the Committee action in 1912-13 may be classified as follows:

Withdrawals	54
First Failures	122
Probation other than First Failure.....	32

Of the 54 withdrawals on account of deficiencies in scholarship, 16 had received "first failure" in the preceding semester, 13 some earlier semester, while 25 were "first failures" adjudged by the Committee to be "unusually serious" and so denied a second trial.

Of the total of 176 failures for the year, 165 were men and 11 women; or, stated in percentage of the number of each group registered in the University, 13.5 per cent of the men failed and 2 per cent of the women.

In the following table, men and women are grouped separately by residence, the percentage of failures being given for each group:

RESIDENCE	Men, total number	Per cent. of failures
Palo Alto and Mayfield.....	235	17
Encina Hall	330	10.6
Private residence on Campus.....	129	11.6
"Commuters" (from San Jose, etc.).....	120	6.6
Fraternities	413	16.5
Women		
Palo Alto and Mayfield	85	1
Roble Hall	104	2
Madrono Hall and private residence on Campus.....	108	0
"Commuters" (from San Jose, etc.).....	38	0
Sororities	230	3.5

In 1911-12, 11 per cent of the total registration of men were deficient in scholarship. This year 13.5 per cent were deficient, the greatest increase being among the non-fraternity men residing in Encina and in Palo Alto and Mayfield. Among the women there is a noticeable increase in scholarship deficiencies among the sororities, and a great improvement among those residing in Palo Alto and Mayfield. No failures were recorded among the commuters and the women residing at Madrono Hall and private residences on the campus. In the latter case this is a decided improvement over last year, when 3.7 per cent were deficient.

CHARLES HENRY GILBERT,
Chairman.

APPENDIX III

REPORT OF THE REGISTRAR

The number of students in attendance in 1912-13 was 1,792. Of these, 1,198 had previously been in attendance, 594 were new students. As compared with 1911-12, there was a decrease in old students of 5 and an increase in new students of 23, making a total increase of 18. The total attendance for the year (1,792) does not of course represent the attendance at any one time. The total registration for the first semester (which is always larger than for the second semester) was 1,671; and the maximum attendance at the highest point was probably 30 or 40 less—approximately 1,635, or 500 women and 1,135 men.

STATISTICS OF REGISTRATION, 1908-1913

	1908-09	1909-10	1910-11	1911-12	1912-13
Old students	1,133	1,135	1,177	1,203	1,198
New students	534	609	581	571	594
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	1,667	1,744	1,758	1,774	1,792
Percentage of old students					
returning	65.1	68	67	68.4	67.5
From California	1,319	1,364	1,371	1,377	1,325
From other States and foreign					
countries	348	380	387	397	467
Percentage outside California	20.8	21.8	22	22.4	26

AVERAGE AGE AT MATRICULATION

	1908-09	1909-10	1910-11	1911-12	1912-13
Graduates*	28.3	28.2	29.7	25.6	25.8
Advanced standing	22.3	22.5	21.6	22.4	22
Freshmen	19.9	20.2	21.5	20.2	19.5
Specials	24	23.7	26.5	23.2	24.4

AGE OF FRESHMEN AT MATRICULATION

	1908-09	1909-10	1910-11	1911-12	1912-13
Under 17	4	5	4	8	3
17-18	33	29	35	41	42
18-19	89	104	108	104	98
19-20	111	117	122	94	95
Over 20	143	145	123	128	113
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	380	400	392	375	351

*From other colleges.

STATISTICS OF ENTERING CLASS 1912-13

From Colleges—	Number entering	Number returning 1913-14	Failed in scholarship
Graduates	44	14	6 (13.6%)
With advanced standing.....	139	96	15 (10.8%)
Without advanced standing...	3	1	2 (66.6%)
	<hr/> 186	<hr/> 111	<hr/> 23 (12.3%)
From Normal Schools	15	12	0
From Preparatory Schools—			
On recommendation (wholly or mainly):			
In full undergraduate standing	344	272	35 (10%)
In partial standing.....	1	0	1 (100%)
Wholly on examination:			
In full standing	0	0	0
In partial standing	0	0	0
	<hr/> 360	<hr/> ..	<hr/> 36 (10%)
As special students	48	27	13 (29%)
	<hr/> 594	<hr/> 311	<hr/> 72 (12%)

COMPARATIVE NUMBERS AT MATRICULATION

From Colleges—	1911-12	1912-13
Graduates	33	44
With advanced standing.....	109	139
Without advanced standing.....	7	3
	<hr/> 149	<hr/> 186
From Normal Schools.....	10	15
From Preparatory Schools—		
On recommendation (wholly or mainly):		
In full undergraduate standing.....	361	344
In partial standing.....	5	1
Wholly on examination:		
In full standing.....	1	0
In partial standing.....	0	0
	<hr/> 367	<hr/> 345
As special students.....	45	48
	<hr/> 571	<hr/> 594
Total		

CLASSIFICATION BY MAJOR SUBJECTS

	1909-10	1910-11	1911-12	1912-13
Greek	11	4	10	11
Latin	40	42	38	35
Germanic Languages	94	77	78	67
Romanic Languages	40	35	35	34
English	149	153	139	146
Philosophy	5	5	5	5
Psychology	3	6	6	7
Education	39	57	52	67
History	152	185	188	187
Economics	157	149	136	162
Law	86	124	113	147
Pre-Legal	189	188	177	151
Graphic Art	47	51	53	45
Mathematics	22	22	24	33
Applied Mathematics.....	..	1	1	1
Physics	13	13	15	11
Chemistry	79	66	82	85
Botany	29	25	29	31
Physiology	70	61	76	68
Anatomy .....	..	2	4	..
Bacteriology .....	..	2	1	2
Zoology	24	19	14	15
Entomology	13	16	18	18
Geology and Mining.....	100	102	98	105
Civil Engineering	196	182	179	160
Mechanical Engineering	69	51	58	77
Electrical Engineering	108	109	120	82
Medicine	15*	17†	35‡	53§
	<hr/> 1750	<hr/> 1764	<hr/> 1784	<hr/> 1807

* Including 6 also counted under Physiology.

† Including 6 also counted under Physiology.

‡ Including 9 also counted under Physiology; 1 under Chemistry.

§ Including 13 also counted under Physiology; 2 under Chemistry.

DISTRIBUTION OF ENTERING CLASS, 1912-13

FROM COLLEGES, ETC.

Amherst College	1	Trinity College	1
Armour Institute	1	Union College	1
Baltimore Polytechnic Inst....	1	University of Arizona	1
Bradley Polytechnic Institute..	1	Calcutta	1
Brigham Young University...	1	California	14
Bucknell University.....	1	Chicago	1
Buchtel College	1	Colorado	5
Butler College	1	Illinois	2
College of the Pacific.....	13	Indiana	2
Colorado College	2	Iowa	5
Cornell University	2	Kansas	2
Dartmouth College	1	Michigan	2
De Pauw University	4	Montana	1
Earlham College	1	Nebraska	4
Georgia School of Technology..	1	Nevada	3
Hawaii College	1	New Mexico ...	1
Iowa Wesleyan College.....	1	Oregon	1
Johns Hopkins University.....	1	Pennsylvania ...	1
Marquette University	1	Redlands	3
Mass. Inst. of Technology...	1	Santa Clara	2
Mills College	6	So. California ..	10
Mississippi Industrial Institute	1	Texas	1
Morningside College	1	Utah	3
Mt. Holyoke College	1	Washington	4
Northwestern University	5	Wisconsin	6
Oahu College	1	Wyoming	1
Occidental College	8	Vassar College	1
Pacific University	1	Wabash College	1
Parsons College	1	Wagner College	1
Pomona College	16	Waseda University	1
Princeton University	1	Washburn College	1
Ripon College	1	Washington University	
Rizal University	1	(St. Louis)	2
Rockford College	1	Wellesley College	1
Simpson College	1	Wheaton College	1
St. Aloysius College	1	Whittier College	1
St. Mary's College.....	1	Whitworth College	1
Stadt Gymnasium (Bonn,		Williams College	3
Germany)	1	Wilson College	1
Telluride Association	1	Wofford College	1

FROM NORMAL SCHOOLS

Bloomsburg (Pa.) State		San Diego State Normal.....	1
Normal	1	San Jose State Normal.....	8
Los Angeles State Normal....	3	Santa Barbara State Normal..	1
River Falls Normal School....	1		

FROM PREPARATORY SCHOOLS

Aberdeen (Wn.) H. S.	1	Fresno H. S.	6
Alhambra H. S.	1	Fruita (Colo.) H. S.	2
Allen Preparatory School....	1	Girls' Collegiate School	1
Altoona (Pa.) H. S.	1	Girls' H. S. (S. F.)	2
Angels Camp H. S.	1	Glenwood Springs (Colo.)	
Annie Wright Seminary		H. S.	1
(Tacoma, Wn.)	1	Grants Pass (Ore.) H. S.	1
Anoka (Minn.) H. S.	1	Hockley School (Tarrytown,	
Audubon (Ia.) H. S.	1	N. Y.)	1
Bakersfield H. S.	1	Hamlin School	4
Belmont School	1	Hanford H. S.	2
Berkeley H. S.	1	Harker School	4
Berkeley Preparatory	1	Hayward H. S.	3
Bloomington (Ind.) H. S.	1	Helena (Mont.) H. S.	2
Boise (Idaho) H. S.	2	Hollister H. S.	2
Boone's University School ...	1	Hollywood H. S.	1
Bradford Academy	1	Houston School (Spokane,	
Brockton (Mass.) H. S.	1	Wn.)	1
California School Mech. Arts.	2	Hutchinson (Minn.) H. S. ..	1
Campbell H. S.	4	Ida Grove (Ia.) H. S.	2
Castilleja School	9	Idaho Falls (Ida.) H. S.	2
Castle Heights School	1	Imperial H. S.	1
Chaffey Union H. S.	1	Joplin (Mo.) H. S.	1
Chico H. S.	2	Klamath Falls (Ore.) H. S. ..	1
Citrus Union H. S.	1	Lethbridge (Alberta, Can.)	
College City H. S.	1	H. S.	1
Corona H. S.	2	Lincoln H. S. (Portland, Ore.)	2
Defiance College Preparatory..	1	Lindsay H. S.	1
Denver East Side H. S.	2	Logan (Ia.) H. S.	1
Dixon Academy	1	Long Beach H. S.	6
Douglas (Ariz.) H. S.	2	Lordsburg H. S.	1
El Centro H. S.	1	Los Angeles H. S.	17
Englewood (Ill.) H. S.	1	Los Gatos H. S.	4
Escondido H. S.	1	Lowell H. S. (S. F.)	5
Evanston (Wyo.) H. S.	1	Madison (Wis.) H. S.	1
Exeter Union H. S.	1	Manzanita Hall	10
Fowler H. S.	3	Marion (Ill.) H. S.	1

Mission H. S. (S. F.)	1	Salt Lake H. S.	1
Mitchell (S. D.) H. S.	1	San Benito H. S.	1
Modesto H. S.	1	San Bernardino H. S.	2
Monrovia H. S.	2	San Diego H. S.	3
Mt. Tamalpais Mil. Acad.	1	San Jose H. S.	18
Mountain View H. S.	2	San Luis Obispo H. S.	3
National Park Seminary (Washington, D. C.)	2	San Mateo H. S.	3
National City H. S.	1	San Rafael H. S.	1
North Dixon (Ill.) H. S.	1	Santa Barbara H. S.	2
North Yakima (Wn.) H. S.	2	Santa Clara H. S.	3
Oakhurst Collegiate School (Cincinnati, O.)	1	Santa Cruz H. S.	5
Oberlin Academy	1	Santa Maria H. S.	1
Ontario H. S.	1	Santa Monica H. S.	1
Oroville H. S.	1	Santa Paula H. S.	2
Osawatomie (Kansas) H. S.	1	Santa Rosa H. S.	2
Ouray (Colo.) H. S.	3	Seattle (Wn.) H. S.	1
Pacific Grove H. S.	3	Sedgewick Institute	1
Palo Alto H. S.	32	Selma H. S.	1
Parker H. S. (Chicago)	1	Sequoia Union H. S.	1
Pasadena H. S.	7	Shattuck School	1
Patterson (N. J.) H. S.	1	Sierra School	1
Petersburg (Ill.) H. S.	1	Stafford (Kansas) H. S.	1
Phoenix (Ariz.) H. S.	2	Stockton H. S.	3
Piedmont H. S. (Lawndale, N. C.)	1	Tacoma (Wn.) H. S.	1
Pittsfield (Ill.) H. S.	1	Throop Polytechnic Institute	2
Placer H. S.	1	Tonopah (Nev.) H. S.	1
Plainwell (Mich.) H. S.	1	Trinity School (S. F.)	4
Polytechnic H. S. (Los Angeles)	17	Tulare H. S.	1
Portland Academy	2	Tuolumne H. S.	1
Prescott (Ariz.) H. S.	3	University of Ariz. Prep.	1
Prineville (Ore.) H. S.	1	University of Ottawa Acad.	1
Randolph School	1	University School (S. F.)	2
Ransom School	1	Vallejo H. S.	1
Reedley H. S.	1	Visalia H. S.	1
Roseburg (Ore.) H. S.	2	Washburn School	1
Roswell (N. M.) H. S.	1	Washington H. S. (Portland, Ore.)	2
Sac City (Ia.) H. S.	1	Watsonville H. S.	2
Sacramento H. S.	1	West H. S. (Rochester, N. Y.)	1
St. John's H. S.	1	Westlake School	1
St. John's Military School	1	White (S. D.) H. S.	1
St. Matthew's School	1	Whittier H. S.	2
Salinas H. S.	1	Willits H. S.	1
		Woodland H. S.	1
		Yeatman (St. Louis, Mo.) H. S.	2

REGISTRATION OF STUDIES.

Fifteen units constitute a normal semester's work. The following was the actual registration of undergraduates during 1912-13:

	Number of Students.	
	First Semester	Second Semester
For 1 unit.....	0	0
2	0	0
3	0	0
4	0	0
5	2	1
6	5	1
7	0	1
8	2	4
9	2	5
10	15	18
11	12	22
12	23	37
13	134	138
14	194	210
15	524	486
16	323	259
17	168	138
18	96	91
19	2	3

PETITIONS BEFORE COMMITTEE ON REGISTRATION, 1912-13

	First Semester	Second Semester
Total number of petitions acted upon.....	1013	746
To change registration by dropping subjects, or taking up new subjects, or both.....	799	519
To change major subject.....	58	21
To register for fewer than 13 units.....	*71	†97
To register for more than 18 units.....	0	4
For leave of absence	37	48
Miscellaneous	87	104

* Of these 71 petitioning for fewer than 13 units, 39 are included in change of registration.

† Of these 97 petitioning for fewer than 13 units, 47 are included in change of registration.

STATISTICS OF GRADUATION.

The total number of degrees conferred in 1912-13 was 359, distributed as follows:

	Ph.D.	M.D.	J.D.	A.M.	Engr.	LL.B.	A.B.
Greek	1
Latin	6	..	..	6
Germanic Languages	5	..	..	14
Romanic Languages	4
English	2	..	..	32
English Philology	1	..	..	..
Philosophy	3
Psychology
Education	4	..	..	13
History	4	..	..	45
Economics	30
Law	13	..	..	2	18
Graphic Art	6
Mathematics	2	..	..	6
Applied Mathematics	1
Physics	2	..	..	..	..	..	1
Chemistry	1	..	..	4	1	..	16
Botany	1	..	..	4
Physiology	13
Bacteriology	1	..	..	..
Zoology	2	..	..	1	..	..	2
Entomology	1	..	..	3
Geology and Mining	2	..	..	18
Civil Engineering	30
Mechanical Engineering	2	..	6
Electrical Engineering	22
Medicine	7	..	..	..	..	..
	5	7	13	34	3	2	295

In the case of the 295 students who received the degree of Bachelor of Arts, the period of residence was as follows:

2 semesters.....	24
3 semesters.....	10
4 semesters.....	21
5 semesters.....	4
6 semesters.....	16
7 semesters.....	23
8 semesters.....	144
9 semesters.....	35
10 semesters.....	15
11 semesters.....	1
12 semesters.....	2

295

The 98 students who took their A. B. in less than 4 years were enabled to do this as follows ("Extra courses" meaning courses in excess of the normal 15 units per semester) :

Through advanced credit from other institutions.....	61
Through advanced credit supplemented by extra courses.....	13
Through advanced credit supplemented by summer work.....	8
Through advanced credit supplemented by extra courses and summer work	3
Through summer work and extra courses.....	3
Through credit for extra entrance units and extra courses.....	5
Through credit for extra entrance units and extra courses and advanced credit	2
Through extra entrance units and summer work.....	2
Through extra entrance units, summer work and extra courses.....	1
	<hr/>
	98

APPENDIX IV

THE FACULTY

CREDIT FOR GYMNASIUM WORK AND MUSIC

April 18, 1913, the Council, in response to a request from President Jordan, adopted a statement which had been formulated by the Executive Committee, setting forth the conditions governing credit courses in Gymnasium and Music and the reason for assigning University credit for this work. A motion to discontinue granting credit for choir practice was negated by a vote of 24 to 15.

VOCATIONAL GUIDANCE

April 18, 1913, the special committee on Individual Training and Vocational Guidance, which had been appointed the previous year, presented its report. As the result of the adoption of this report a new standing administrative committee on Vocational Guidance was created.

The findings and recommendations of this report are as follows:

I. INDIVIDUAL TRAINING

We find that the major department system now in existence offers a large opportunity for the individual training of students, because it offers as large a chance as any system for the formation of sympathetic human relations between student and teacher. In cases where it fails to secure this end, its failure is likely to be due to extrinsic causes, such as the unfitness of individual professors to sustain that kind of relation with students, and all devices whatever are subject to frustration in exceptional cases.

We urge, however, that all departments take advantage, so far as possible, of the opportunity for individual training which the major department system offers. We recommend to the consideration of all departments plans such as those now used by certain departments, involving

(a) The systematic division, between members of the department faculty, of the work of advising students, in order that every student may be advised by some instructor who is considered responsible for giving such advice;

(b) The careful and frequent consideration of the student's record in all his classes both within and without the major department, in order that he may be held responsible for the quality of his work and may receive at once any aid that the adviser can give;

(c) The reception—or even the voluntary seeking—of information from the student's instructors regarding the quality of his work or the causes of poor work, in order that the opinions of all the student's instructors may be brought to bear upon him, while at the same time all conflict between the advice of the major department and that of individual instructors is avoided.

II. VOCATIONAL GUIDANCE

We recommend that the Academic Council create a standing committee, to be known as the Committee on the Vocational Guidance of Students, and to consist of five members appointed by the President.

We recommend further that it shall be the duty of the Committee on the Vocational Guidance of Students to cooperate with the Departments of the University.

(a) In studying the vocations which are open to graduates of the University and the kinds of training needed by those who enter these vocations;

(b) In disseminating among students the information necessary to make an intelligent choice of a vocation, and to arrange a course of study preparatory to entering the vocation chosen.

TRAINING OF TEACHERS

Early in the first semester a voluntary committee was formed to consider ways and means for meeting the requirements of the State Board of Education for the High School Teacher's recommendation. The report of this Committee was transmitted to the Executive Committee with the request that official consideration be given to the matter. The Executive Committee recommended the appointment of a special committee to take up the whole matter of the training of secondary teachers and the requirements for the High School Teacher's Certificate. This action was approved by the Council April 18th, and a special committee appointed.

STANDING REGULATIONS

During the year, in response to a resolution of the Executive Committee, the General Legislation and Standing Regulations of the Faculty, together with the Articles of Organization, were reprinted with revisions and changes to January, 1913.

APPENDIX V

REPORT OF THE LIBRARIAN

The growth of the Library in size, and therefore also in its possibilities for usefulness, continues at a satisfactory rate. To the Library at Stanford 14,109 volumes have been added, and to the Medical Department in San Francisco, the Lane Medical Library, 2,421 volumes, an average of 1,377 volumes per month. Below is the statement submitted by our order department:

Volumes in Library August 1, 1912.....	174,379
Added by purchase.....	9,648
Added by gifts and exchange.....	1,687
Added by bindery	2,774
<hr/>	
Total volumes added	14,109
Less volumes withdrawn	611
Net increase	13,498
Volumes at Stanford University July 31, 1913.....	187,877
Volumes at Medical Department, San Francisco.....	33,843
Total	221,720

To the Law Library 407 volumes were added, making a total in that collection of 16,394 volumes.

The funds available for the purchase of books and periodicals and their binding have been as shown in the following statement:

Jewel fund appropriation	\$20,000.00	
Transferred from equipment account.....	500.00	
Law fees	1,783.15	
Syllabus fees	584.53	
Thomas Welton Stanford fund.....	485.00	
Lathrop fund for Californiana.....	250.00	
Appropriation for sets	8,000.00	\$31,602.68

LANE MEDICAL LIBRARY

For completion of sets and binding.....	\$ 8,030.00	
Jewel fund	2,000.00	
Income from special funds.....	1,026.27	\$11,056.27
<hr/>		
Total		\$42,658.95

Information as to our current accessions is given in the "Monthly List" regularly issued by the Library during the college year, and space will not be taken here to enumerate even the more important of our purchases.

The year just ended was the last of the five during which the special appropriation of \$40,000 for sets was to be expended. As there yet remain a few orders outstanding on this fund, a detailed statement showing the number of series and volumes acquired will be withheld for another year. Probably we shall then have obtained virtually all of the publications included on the list which the appropriation was designed to cover.

It is a pleasure to note that through the generosity of Mr. Herbert C. Hoover his collection of books on China and the Far East, mentioned in my report of last year as having been placed with us on loan, is now the property of the Library, he having presented it outright. The sum of \$500 presented by Mr. Thomas Welton Stanford for the purchase of books on spiritism and related subjects has been expended, and the second gift of a like amount has been received from Mr. Stanford. Mr. John E. Hewston has presented 526 volumes from his father's library, many of them of considerable interest and value. Mr. Charles G. Lathrop has added to his long list of similar donations the sum of \$250 for the purchase of Californiana. From the Biblioteca Nacional of Chile a shipment of 100 books and pamphlets was received, and from the Musée Royal d'Histoire Naturelle de Belgique 12 volumes of its *Annales*. Chancellor Jordan has presented his personal collection of books on Peace, with the expectation that he will be able to add largely to it in the future.

With the changes in the library staff noted in my last report it seemed wise to make some readjustment of the work at the beginning of the new year. Miss Hays, senior on the staff from the standpoint of service, was transferred from the classification to the reference department, a position for which her experience eminently qualified her. The classification has been carried on by the catalogue department, apparently without loss of efficiency.

The work of the Library in its various phases is indicated by the accompanying reports from the respective departmental heads. Miss Sutcliff, chief cataloguer, submits the following for her department.

CATALOGUING AND CLASSIFICATION

In August, 1912, the work of the catalogue and classification departments of the Library was consolidated. By this change economy in the handling of the books has been effected, and I hope and believe that there has been no deterioration in the quality of the work.

The end of the year finds the department in prosperous condition. The records of work accomplished show a gratifying increase over last year. They also show that the number of books catalogued exceeds by

something over one thousand the total number of new accessions to the library. This means that considerable progress has been made with the unclassified and uncatalogued portions. There is still a small group of books in the Hopkins library to be finished, and a much smaller group in the Australian collection. These should be made smaller still during the coming year, unless our total of new accessions increases more than it has in 1912-13.

Two years ago the Stanford Library began supplying copy for catalogue cards to the Library of Congress. This work has been continued during the past year, and since last August we have sent to Washington copy for more than 600 titles. This co-operation keeps us in close touch with the Library of Congress, and we derive much benefit from the association.

The Library of Congress catalogue, which is filed in the catalogue room, now consists of approximately 590,000 titles. We receive the Library of Congress proof-sheets daily. These are arranged and filed, so that we now have a complete record of the books in the national library as far as they have been catalogued.

In 1912 we began buying cards from three other libraries, viz, Harvard University, the University of Chicago, and the Königlische Bibliothek in Berlin. All of these cards, to the number of 19,000, are in process of being filed with the Library of Congress cards, so that we are gradually forming a great union catalogue which is bound to be of immense bibliographical value.

The cards from Berlin are especially interesting because they catalogue for us the dissertations of the German universities. We receive hundreds of these dissertations every year, and it is quite out of the question for our catalogue force to take care of them properly. By using these cards the material is made available.

Following is a synoptical statement of the work of the department:

Number of volumes added to the shelf list.

New	11,734
Old	443
Continuations from bindery	1,799
<hr/>	
Total	13,976
Changes, corrections, etc.	960

Number of volumes added to the catalogue:

New	11,734
Old	1,625
Bindery	1,799
<hr/>	
Total	15,158
Recatalogued	833

Cards added to the catalogue:

Typewritten cards	25,240
L. C. cards	17,167
A. L. A. cards.....	811
Berlin	2,150
Harvard	63
Chicago	52
Total number of new cards filed in the catalogue	45,483

SERIAL DEPARTMENT

Miss Brooks reports:

The work of the serial department for the year 1912-13 has shown an increase by the addition of 55 subscriptions, distributed through 18 departments of the University, beside a number of donations which do not make complete volumes but are of too much value to be discarded. Seven subscriptions have either ceased publication or been discontinued from our list. The average daily mail is about 95 pieces. We listed for Mr. Smith's class in Journalism, 6 Chicago dailies for the months of February and March; 3 Kansas City dailies for November and December; and 11 New York dailies for March and April, making an annual mail of about 31,000 pieces. Our list of serials represents publications in at least fifteen different languages, and they come to us from every continent and most of the countries of the world.

There are 1,443 serials regularly bound, of which 52 have been added to our list this year. There have been 2,096 volumes of serials and 276 books bound, and 362 books rebound, together with 82 volumes for the Law Library, making a total of 2,816 volumes bound.

The serial reading-room is well filled by students and members of the faculty during many hours of the college days, and at times the capacity of the room is strained. The little bulletin of "Selected articles from current periodicals" seems to be consulted by an increasing number of persons.

LOAN DEPARTMENT

Mr. Park submits the following:

The work of the loan department for the year 1912-13 was marked by two changes: each student was required to sign a library card as part of his registration, and a new system of charging books issued for home use was introduced.

In the past the Library has been put to much inconvenience before the appearance of the directory in October by the fact that the addresses of students have not been on file here. An attempt was made each year to get the addresses of students by having them sign a guarantee register as they called for books at the loan desk. This was never satisfactory,

as the list thus obtained was always incomplete. Last year students were required to fill out library cards when they registered in the University. These cards were filed at the Library, and gave us a complete directory of students from the beginning of the year. This innovation has proved very useful.

The record which the Library keeps of books that are issued to students for home use has not been quite satisfactory. Before the present year this record was simply the home cards for such books, filed alphabetically by authors. The record did not show when a book was due, nor what books any individual had. At present it does not seem to be necessary for us to keep a record of the books issued to each individual; but it is important that we should know when all books are due, in order that we may control their circulation. Last fall an attempt was made to solve this difficulty through the introduction of an additional file. For some time the call-slips for books which were issued for home use were kept, and were filed under the date on which the books were due. This gave us two records, the alphabetic file by authors, which showed where all books not in the stack were, and the time file, which showed when books issued to students were due. This scheme was quite satisfactory, but it took so much time to keep the additional record that we were not able to continue it with the help then available.

Of the two records, the time record seemed the more important, consequently the alphabetic file was discontinued in the case of books issued to students, and the book-cards were filed by dates. This one record is proving more satisfactory than the old plan, even though we cannot readily learn from the present student file what books are out.

It must be said further that this time record slows up the service somewhat, because it makes it necessary for us to stamp in each book issued to a student the date on which that book is due. This was not done under the old scheme. It seems that it would be highly desirable to keep both records, whenever the library is in a position to do so.

The circulation of books for the year is shown by the following table:

August	804
September	18,193
October	21,162
November	15,786
December	12,246
January	16,554
February	19,660
March	17,329
April	13,643
May	6,895
June	541
July	507

143,320

In the course of the summer an inventory has been taken of all the library books except the Hopkins Railway and Hildebrand collections and the books shelved in the library of the Education department. New newspaper stacks were set up in the basement, and the newspapers shelved thereon. The shelves in the basement formerly occupied by newspapers were filled with books from the regular stacks.

REFERENCE DEPARTMENT

Miss Hays submits the following report:

The work of the reference department during the college session is almost entirely absorbed in the care of the reference room itself—being here to answer questions and to control the room. The routine of checking the state and United States and foreign documents, as well as the college and railroad reports and pamphlets, with the filing of the same, complete the daily work. In addition, the list of Faculty publications for 1911-12 was prepared for the President's report, and slight lists were gotten ready for different purposes.

In vacation time, and especially during the summer, the reference room shelves were read and inventory was taken of the 000-099 shelves and the Stanford Collection. In the basement the United States documents were moved to more comfortable quarters, and all unclassified material filed by the reference department brought into the center stacks. The shelves of the Agriculture, Civil Service, and part of the Commerce department were read and checked by the new United States check list. For reference use in particular the "List of Indexed Magazines in our Library" was thoroughly revised and brought to date.

There are now on the open shelves of our room about 2,400 volumes. These have been selected as carefully as possible with aids at command. During the year 177 volumes were added and probably 50 removed in the effort to have the best and latest on the subject. Our collection is still weak in the 500's and 600's, but there is little general demand for these and the specialists consult the department libraries.

The general collection of bibliography and 000 material has been shelved under the reference room for ease in consultation, thus becoming almost a part of it.

Facing a new and perhaps busier year, it may not be amiss to state general conclusions on the relations of the reference room to the community. The reference room is not merely a collection of books to which the instructors send their students to read certain things. It is that, and for that purpose we must have the books sought. Beyond that, however, it is a place to which students bent on original work come for help and guidance. The instructor says "Go to the Library and work up this or that subject"; and they come to us to know how to begin. Moreover, the instructors themselves working in a new field come to the reference room for help. This means that the ones who are in charge of the

room must be equal to the demands made on them. This ability to respond quickly with the best possible information to questions from any quarter does not come from unaided inner consciousness. Only by constant striving can one hope to approach the position of being ready. It is not possible to know everything, but it is possible to get lines on most subjects by systematic trying. Magazines which are not indexed often are the most important and ought to be examined; reference books should be tested, and one should try to have at least a knowledge of the best authorities on every subject. Constructive work is difficult under pressure of daily routine and the physical necessity of being in one spot for long hours subject to frequent interruption. This is the problem that faces the assistants in the reference room at present, how to make themselves equal to the demands which the academic world is, very rightly, encouraged to make.

LANE MEDICAL LIBRARY

This Library was removed from its old quarters in the Clinical building to the new building across the street between August 25th and September 3d, 1912, although the structure was not entirely completed until some two months after that date and the formal dedication did not take place until November 3d.

The new reading room has ample and well lighted space for between sixty and seventy readers, while the special room for the Barkan Library of Ophthalmology and Otology could easily accommodate fifteen or twenty more. The stacks will provide shelf room for approximately 60,000 volumes, and there is ample room for expansion beyond this figure.

There have been added to the Library during the year 2,421 volumes. Of these 298 were gifts, and the remainder consisted of new books purchased and journals bound and added to the files which the Library perpetuates. The work of filling up the gaps in the many valuable sets which came to us in an incomplete state, has gone steadily forward. With the constant growth of our subscription list and the resultant desire to acquire the preceding volumes of all journals now being currently received, the process of completing the sets seems likely to continue for an indefinite time.

Acting upon the donor's advice, the income of the Barkan fund had been allowed to accumulate until late in the year. In July an order was placed on Dr. Barkan's recommendation for complete sets of most of the leading ophthalmological journals in English, French and German which were not already in the collection.

Owing to the confusion naturally resulting from getting settled in the new quarters and to the resignation of Miss Kinsley, the special cataloguer, in January, not so much has been accomplished in the way of classification and cataloguing as had been hoped for. Between September and January the treatises and text-books were taken from the alphabetic

author arrangement and grouped roughly under classes, according to a system devised two years ago for this library. The class number was marked in the book and on the author-slips made last year for ordering the printed cards. These author-slips filed alphabetically greatly facilitate the use of the library. The arrangement of books by subjects is a present help and will aid in cataloguing.

During 1913 the most used books—those published since 1900—were classified and catalogued, 792 cards were filed in the shelf list, and 4,578 cards were filed in the catalogue. Book-cards have been made for all books catalogued, for periodicals published since 1900, and for all German periodicals.

SUMMARY FOR THE YEAR

Volumes accessioned	2,421
Volumes in Library July 31, 1913 (not including incomplete or unbound material).....	957
Volumes bound	957
Expended for books, periodicals and binding...	\$7,878.42
Cards filed in catalogue	4,578
Cards filed in shelf list.....	792
Sets completed (since 1910)	88

During the year the library staff comprised George Thomas Clark, librarian; Mary Jeannette Woodruff, stenographer; Alice Newman Hays, reference librarian; Helen Binninger Sutliff, chief cataloguer; Frances Sophia Courtenay James, medical librarian; Charles V. Park, chief of loan desk; Elizabeth Hadden, chief of order department; Lucia May Brooks, chief of serial department; Lena M. Keller, cataloguer; Anna Gertrude Hall, cataloguer; Louise M. Peters, cataloguer; Jeannette Catherine Morgan, cataloguer; Marion L. Horton, cataloguer; Mary Elvira Smith, cataloguer; Laura Agnes Williamson, cataloguer; Catherine Ida Birch, assistant in order department; Agnes Elizabeth Brown, assistant at loan desk; F. E. Brasch, assistant at loan desk; Ethel G. Heald, assistant in serial department; Minna Stillman, reference assistant; Louise Ophüls, assistant in Lane Library; Lydia E. Kinsley, cataloguer, Lane Library; Ida R. Hayward, assistant Lane Library; Hannah Lillian Todd, bindery assistant; Marguerite Brown, Thomas Lafayette Dyer, Talmadge Laughner Smith, Ollis Willard Newman, Chester A. Chiles, LeRoy Taylor (first semester), E. G. Lammiman (second semester), Philip P. D. Perham, student assistants; Jean Oliver, student assistant in Lane Library.

GEORGE THOMAS CLARK,
Librarian.

APPENDIX VI

APPOINTMENT SECRETARY

During the year 1912-13 the total number of candidates registered for positions in the office of the Appointment Secretary was 405. Of this number 101 were new registrations; 304 old (the large majority with positions, but wishing to be transferred to more desirable ones).

The total number of requests for candidates (direct) was 452. Of this number 433 were for teaching and administrative positions; 19 were miscellaneous (dean of women, social worker, librarian, private secretary, stenographer, bookkeeper, playground worker, chaperone, governess, matron, housekeeper, solicitor, photographic assistant, meat and dairy inspector, and the like).

Full reports regarding appointments during the summer have not yet been made. Judging from previous years, when complete data are received the number of appointments for the year will approximate 200.

The total number of requests for information concerning candidates from Teachers' Agencies was 48.

The total number of sets of credentials sent out regarding candidates was 718.

Requests for candidates have been received from California, Pennsylvania, Alabama, Kansas, Colorado, Wyoming, Nevada, Arizona, Texas, New Mexico, Washington, Oregon, Montana, Alaska, and Samoa.

As usual, the number of requests for men has been much larger in proportion to the number registered than for women. This is especially true in certain subjects—mathematics, physics, chemistry, "general science," commercial subjects and manual training.

The demand for teachers in domestic science and art, manual training, agriculture, physical training and hygiene, and in music has far exceeded the number of candidates listed.

As has been the case in the two preceding years, a large part of the time of the Appointment Secretary has been spent in consultation with students regarding vocations other than teaching and desirable combinations of subjects for high school work, and in collecting for the use of students material for a bibliography on vocations.

SUSAN BROWN BRISTOL,
Appointment Secretary.

APPENDIX VII

DEAN OF WOMEN

For the first time, the Dean of Women has felt satisfied with the number of women provided with living accommodations on the campus. Only those in their own homes and the small proportion financially unable to avail themselves of campus accommodations have not been in residence. Furthermore, the four women who have not lived in organized houses have been graduates or upper classmen. Roble, Madrono, Alvarado, Mariposa, Langworthy and the eight sororities have made up our community. The new house built by Alpha Omicron Pi was opened at the beginning of the year, the Alpha Phi house has been materially enlarged, and four sororities have installed heating systems. The more stringent rules of the Committee on Public Health have aided to make our houses more comfortable in every respect.

Never have the relations between sorority and non-sorority women, conducted by the Pan-Hellenic Organization, been more satisfactory in regard to the lamentable custom of "rushing," nor broader-minded with respect to the general welfare of the community.

The building fund for the Women's Club House has been increased to fourteen thousand dollars, and the work of construction is soon to begin.

The Student Loan Fund has become better established, and by its small loans seven women have been aided, two of whom were thereby kept at their university work throughout the year.

A sponsor system of senior women was inaugurated by the Women's Conference for the benefit of freshmen women at the beginning of the first semester, and did creditable work in many instances throughout the year, aided by the Young Women's Christian Association.

The Dean of Women has kept office hours in Room 203 and in Roble Hall throughout the year, and given the usual abundance of time to student activities and social functions.

EVELYN WIGHT ALLAN,
Dean of Women.

APPENDIX VIII

STUDENT ADVISER

The office of Student Adviser never having been fully defined, it has fallen upon this officer to develop his own position, and this has been made possible by the hearty co-operation of the Students' Council and of the whole undergraduate body.

The current year having been the first of student control, much of the responsibility of this system fell upon the Student Adviser, who is ex officio a member of the Men's Student Council. The work of the Council has been that pertaining to all forms of discipline and of regulations related to the general welfare of the student body and the good name of the University. The co-operation of the Council has been ideal, the foremost desire of its members being to consider the influence upon the University primarily, and upon the individual secondarily. This made it possible to meet all matters fairly and frankly, and won the confidence of all men called before the committee to such extent that in all cases there has been a frank statement of facts, even where such facts were incriminating to the individual. The report of the chairman of the Council covers more fully the work done, but the Student Adviser wishes to state that he believes that the condition at present is better than ever before, and that at this time there is less drinking or tendency toward such indulgence than at any time during the last five years.

The office work of the adviser has consisted in meeting with and advising primarily the freshmen as individuals and in their class organizations. He has so far as possible advised them in regard to their work, and where necessary in regard to their conduct. In several such cases he feels that he has actually met with remarkable response.

During the year he has obtained occupation for needy students of all classes, and has in some cases obtained employment for some who found it absolutely necessary to leave college and had no work in view.

The presidents of some of the fraternities have come for counsel in regard to internal matters and in regard to certain of their members, and have shown a healthy interest and desire to elevate the moral and intellectual attitude of their members.

Beside these activities the Student Adviser has answered queries of parents, has given information in regard to courses, answered letters inquiring into our manner of student control, and has, in general, tried to be of service wherever possible.

KARL LUDWIG SCHAUPP,
Student Adviser.

APPENDIX IX

THE MEMORIAL CHURCH

A copy of the following letter was addressed to each freshman entering the University in September, 1912:

Stanford University, Cal., September 1st, 1912.

TO THE MEMBERS OF THE CLASS OF 1916:

Stanford University provides for the moral and spiritual culture of her students by the appointment of a Chaplain and the maintenance of a Church—undenominational and free.

As the University Chaplain, I write to bid you welcome to your new student life, and to beg you to share the spiritual privileges which the college so generously offers you.

For the moment we are without a church, but your class will, I trust, help to rededicate the restored building at the beginning of the next college year. Meantime services of public worship are held as follows:

Daily in the old Chapel at 8 a.m., a devotional service lasting ten minutes, in which students take part. There is also a short address.

On Sunday, at 11 a.m., a service, entirely undenominational in character, with sermon. Distinguished preachers of various denominations are invited to preach at this service on alternate Sundays.

I cordially invite you to attend these services, and to take your part and share in the religious life of the University by devotion to your college church and by alliance with the Christian Associations. Student life has its peculiar dangers. You will find your social life, study, athletics, fascinating and engrossing. Of necessity the atmosphere of the classroom and laboratory is critical. All things are put to the test of reason. Many new students in the presence of these influences begin to neglect their religious life. I therefore urge you to be true to your moral principles and careful of your religious life. There is no antagonism between reason and religion.

Religion is the greatest need of every human soul. Nothing else, nor pleasure, nor intellect, nor ambition, nor wealth can take its place.

Why? It is the secret and the source of spiritual power; it is the basic principle of the finest type of human character; it is to the soul what sunshine is to nature—light and life.

I keep office hours, daily except Monday, from 9 to 12. If you need help or advice at any time come to me. I am your servant.

With every good wish, I am,

Yours sincerely,

D. CHARLES GARDNER.

CHAPEL SERVICES

One hundred and forty-five services of public worship have been held during the year. Total attendance 9,249.

Sundays, first semester, 3,179.

Average, 212.

Sundays, second semester, 3,881.

Average, 258.

Daily Chapel, first semester, 1,315.

Average, 22.

Daily Chapel, second semester, 814.

Average, 15.

Baccalaureate Sunday, 1,800.

The Chaplain invited the following named clergymen to preach on alternate Sundays:

Congregational:

Dr. Fox, Pasadena.

Dr. Day, Los Angeles.

Rev. Jump, Oakland.

Dr. MacElveen, Evanston, Ill.

Presbyterian:

Dr. Willis Baer, Los Angeles.

Dr. Van Dyke, Princeton.

Dr. Rader, San Francisco.

Rev. Robert Freeman, Pasadena.

Baptist:

Rev. G. E. Burlingame, San Francisco.

Episcopalian:

Bishop Sanford, Fresno.

Dean Gresham, San Francisco.

Methodist:

Bishop Hughes, San Francisco.

Dr. Locke, Los Angeles.

Unitarian:

Rev. W. S. Morgan, Berkeley.

Dr. Zueblin, Chicago.

TEACHING.—The Chaplain has given

- (a) Course of lectures in the University on the life and teaching of Christ,
- (b) Courses of instruction to voluntary groups in
 1. Moral philosophy,
 2. The Bible.

PASTORAL WORK.—Day by day the Chaplain keeps office hours, meeting individual students who need counsel or advice, groups of students for consultation on university matters, and those engaged in Christian Association work. This in addition to calls upon students in halls, lodgings and in hospitals.

PREACHING.—The Chaplain has preached on alternate Sundays, made addresses at Daily Chapel, and on sundry other occasions and places.

D. CHARLES GARDNER,
Chaplain.

APPENDIX X

LELAND STANFORD JUNIOR MUSEUM

As in the past, much of the work was confined to the care of buildings and collections, the working staff being reduced to the least possible number for economical reasons.

Few changes have been made during the past year, the present temporary installation being retained until the building has been restored.

The attendance has been exceptionally good, eastern and foreign travelers being more numerous than usual. School classes from adjacent towns have visited at various times. It is particularly gratifying to note that the various departments of the University are making more use of the collections in their class work, a tendency that should be encouraged.

The donations include a magnificent collection of Venetian glassware presented by the Salviati Company of Venice. It was prepared under the personal supervision of Mr. M. Camerino, and includes some two hundred splendid examples of Venetian art glass. This donation is to supplement the large exhibit of Venetian glass previously presented by the same firm, thus making it the most complete and largest exhibit of its kind in the United States.

Mr. A. R. Bowen, of Haywards, presented a very unique old bedspread in a splendid state of preservation.

Mr. Jos. P. Ponce added to his former donations an old Spanish sword found on his ranch many years ago.

From Mr. J. E. Hewston was received a fine engraving of San Francisco in the early days, an engraving both rare and beautiful.

From the Vina Ranch was received an Indian mortar and pestle.

HARRY C. PETERSON,
Curator.

APPENDIX XI

PUBLICATIONS OF THE FACULTY

DAVID STARR JORDAN :

- Catalogue of the fishes of Japan (with S. Tanaka and J. O. Snyder) : *Journal of the College of Science, Tokyo Imperial University*, vol. 33, March 31, 1913.
- Description of *Anguilla manabei*, a new eel from Japan : *Proceedings of the U. S. National Museum*, vol. 44, 1913.
- Description of the Yachats "smelt," a new species of atherinoid fish from Oregon (with J. O. Snyder) : *ibid.*, vol. 45, 1913.
- Dream of invasion : *Independent*, vol. 73, November 1912.
- Fate of Armenia : *Armenia*, vol. 6, February 1913.
- Higher politics : *Independent*, vol. 75, July 3, 1913.
- Impossible war : *ibid.*, vol. 74, February 27, 1913.
- In the wilderness : World Peace Foundation, Boston, May 1913.
- Interlocking directorates of war : *World's Work*, vol. 26, July 1913.
- Japanese exclusion : *Independent*, vol. 74, May 1, 1913.
- Lane medical library of Stanford University : *Science*, n. s. vol. 36, December 6, 1912.
- Naval waste : World Peace Foundation, Boston, 1913.
- Navy and statesmanship : *Advocate of Peace*, vol. 75, March 1913.
- Note on generic name *Safole*, replacing *Boulengerina* for genus *Kuhliid* fishes : *Proceedings of U. S. National Museum*, vol. 42, August 1912.
- Notes on ichthyology : *American Naturalist*, vol. 46, December 1912; *ibid.*, vol. 47, July 1913.
- Perennial bogey of war : *World's Work*, vol. 25, December 1912.
- President's address (Science dept.) : National Educational Association, *Addresses and Proceedings*, 1912.
- Protection incompatible with democracy : *Burden of protection. International Free Trade League*, 1912.
- Rising cost of living : *Expositor and Current Anecdotes*, vol. 14, 1913.
- Story of a good woman, Jane Lathrop Stanford. American Unitarian Association, Boston, 1912.
- Supplementary notes on fossil sharks (with Carl Hugh Beal) : *University of California Publications. Bulletin of Department of Geology*, vol. 7, April 25, 1913.
- Teaching of personal hygiene in the schools. National Educational Association, *Addresses and Proceedings*, 1912.

- To Barbara, with other verses. Privately printed, Palo Alto, 1913.
 Truth about the fur seals of the Pribilof Islands (with G. A. Clark) :
U. S. Bureau of Fisheries, Economic Circulars, no. 4, December 20,
 1912.
 Unrest and progress: *Independent*, vol. 73, August 8, 1912.
 War and waste; address delivered at the Harvard Union, Cambridge,
 Mass.: *Peace*, vol. 1, September 1912.
 What shall we say? I-XXXVIII, Being comments on current mat-
 ters of war and waste. World Peace Foundation, Boston, 1913.
 William Russell Dudley: *Dudley Memorial Volume, University series*,
 1913.
 Zoological nomenclature: *Science*, n. s., vol. 36, October 4, 1912.

GEORGE ARCHIBALD CLARK:

- Administration of the fur seal service: *Science*, n. s., vol. 37, Febru-
 ary 28, 1913.
 Conservation of fur seals: *North American Review*, vol. 197, May
 1913.
 Fur seal census: *Science*, n. s., vol. 36, December 27, 1912.
 Grade teaching of shorthand: *Sierra Educational News*, vol. 9, May
 1913.
 Katmai eruption: *Bulletin of the Seismological Society of America*,
 vol. 2, December 1912.
Idem: *Delta Upsilon Quarterly*, vol. 32, June 1913.
 Recent fur seal legislation: *Nation*, vol. 96, April 1913.
 Truth about the fur seals of the Pribilof Islands (with D. S. Jordan) :
U. S. Bureau of Fisheries, Economic Circulars, no. 4, December
 20, 1912.

LATIN

HENRY RUSHTON FAIRCLOUGH:

- Horace's view of the relations between satire and comedy: *American
 Journal of Philology*, vol. 34, 1913.
 Editor of Virgil's Aeneid, Books I-VI, with introduction, notes and
 vocabulary. Fresh reprint, with corrections. Sanborn & Co., Bos-
 ton, 1913.
 Editor of *Sanborn's Student's Series of Latin Classics*. Tacitus:
 The Annals, I and II, edited by Bowen, 1913.

BENJAMIN OLIVER FOSTER:

- Live Latin: *Classical Journal*, vol. 8, January 1913.
Reviews of
 Sex proprietii Elegiarum Libri IV recensuit Carolus Hosius in aedibus
 B. G. Teubneri, Lipsiae, 1909: *American Journal of Philology*,
 vol. 33, 1912; Catulli Tibulli, Properti Carmina quae extant omnia
 cura R. Ellis, J. P. Postgate, J. S. Phillimore, Londini, 1909, *ibid.* ;
 Enk, Ad Propertii Carmina Commentarius Criticus, Zutphaniae,
 1911; *Classical Philology*, vol. 7, October 1912.

GERMANIC LANGUAGES

WILLIAM ALPHA COOPER:

Reviews of

- Goethes Liebesgedichte, ed. Gräf: *Nation*, vol. 95, December 5, 1912;
 Heinrich Schmidt, Goethe-Lexikon: *ibid.*, vol. 96, April 24, 1913;
 Schade, Faust vom Ursprung bis zur Verklärung durch Goethe:
ibid., vol. 96, April 24, 1913; Von der Hellen, Register to the
 Jubiläumsausgabe of Goethe: *ibid.*, vol. 97, July 17, 1913.

BRUNO BOEZINGER:

- Mündliche und schriftliche Übungen; ein elementarbuch für den
 deutschen aufsatzunterricht nach der direkten methode. Holt,
 New York, 1913.

FRIEDRICH ALEXANDER WYNEKEN:

- Der Abschriftsteller: *Universal-Redakteur*, July 22, 1913.
 Alouette: *Hamburger Fremdenblatt*, July 8, 1913.
 Don Pedro und sein Henker: *ibid.*, July 19, 1913.
 General Sutter: *Deutsche Erde*, 12. Jahrgang, Heft 2/3, 1913.
 Rousseaus Einfluss auf Klinger: *University of California Publications*
in Modern Philology, vol. 3, October 1912.
 Der sterbende Indianer: *Hamburger Fremdenblatt*, October 18, 1912.
 Ugo Dianda: *Berliner Lokal-Anzeiger*, May 8, 1912.
 Zwei Männer und die Wüste: *Hamburger Fremdenblatt*, November
 29, 1912.

ROMANIC LANGUAGES

COLBERT SEARLES:

- Italian influences as seen in the sentiments of the French academy
 on the Cid: *Romanic Review*, vol. 3, October-December 1912.

ALBERT LÉON GUÉRARD:

- French prophets of yesterday; a study of religious thought under
 the second empire. Appleton, New York, 1913.

AURELIO MACEDONIO ESPINOSA:

- Cuentitos populares nuevomejicanos y su transcripción fonética:
Bulletin de Dialectologie Romane, vol. 3, December 1912.
 Jordan: La Cosecha Humana, traducido del inglés por Aurelio Macedonio Espinosa. Bailly-Bailliére, Madrid, 1912.
 New Mexican Spanish folklore, Part 4, Proverbs, Part 5, Popular comparisons: *Journal of American Folklore*, vol. 26, April-June 1913.
 Old Spanish 'Fueras': *Romanic Review*, vol. 4, April-June 1913.
 Studies in New Mexican Spanish, Part II, Morphology, continued: *Révue de Dialectologie Romane*, vol. 3, December 1912; vol. 4, January 1913.

ENGLISH LITERATURE AND RHETORIC

ALPHONSO GERALD NEWCOMER:

- A Shakespeare Crux: *Modern Philology*, vol. 11, July 1913.
 Shakespeare and Herbert (a communication): *Nation*, vol. 96,
 January 16, 1913.
 Editor of Macaulay's Essays on Goldsmith, Frederic the Great, and
 Madame d'Arblay. Edited with introduction, notes and glossary.
 Scott, Foresman & Co., Chicago, 1913.
Reviews of
 Harris: Women of Shakespeare: *Dial*, vol. 54, March 16, 1913;
 New Grant White Shakespeare: *ibid.*, vol. 53, November 1, 1912;
 Shakespeare in relief (review of Figgis: Shakespeare, a study):
ibid., vol. 53, August 1, 1912.

HENRY DAVID GRAY:

- Evolution of Shakespeare's heroines: *Journal of English and Ger-
 manic Philology*, vol. 12, January 1913.

VAN WYCK BROOKS:

- John Addington Symonds: *Forum*, vol. 49, April 1913.
 Platitude: *Forum*, vol. 48, November 1912.

EDITH RONALD MIRRIELES:

- Courting of Calla Lily: *Sunset*, vol. 29, November 1912.
 Perjured: *Atlantic*, vol. 110, November 1912.
 Spring thaw: *Harper's Weekly*, vol. 57, March 1, 1913.
 Two on a mountain: *McClure's*, vol. 41, July 1913.
 Vicarius: *Atlantic*, vol. 111, February 1913.
 Willins turns up: *Sunset*, vol. 30, May 1913.

ENGLISH PHILOLOGY

EWALD FLÜGEL:

- Eugene Soule, Memorial address: *Palo Alto Times*, April 17, 1913.
 Isabelle Dye Butler, Memorial address: *Pacific Unitarian*, vol. 21,
 July 1913.
 Lucy Toulmin Smith, 1838-1911: *Anglia*, vol. 37, June 2, 1913.

PHILOSOPHY

GEORGE HOLLAND SABINE:

- Professor Bosanquet's Logic and the concrete universal: *Philo-
 sophical Review*, vol. 21, 1912.
 Descriptive and normative sciences: *Philosophical Review*, vol. 21,
 1912.

PSYCHOLOGY

FRANK ANGELL:

Gustav Theodor Fechner: *Popular Science Monthly*, vol. 83, June 1913.

Minor studies from the psychological laboratory of Stanford University: Size and distance of projection of an after-image on the field of closed eyes (with W. T. Root, jr.): *American Journal of Psychology*, vol. 24, April 1913.

LILLIEN JANE MARTIN:

Concerning the functions of a visual image in memory and imagination; paper before the American Psychological Association, December 1912; Abstract: *Psychological Bulletin*, vol. 10, February 15, 1913.

Electrical supply, and certain new additions to the laboratory equipment in Stanford University psychological laboratory: *American Journal of Psychology*, vol. 24, January 1913.

Projektionsmethode und die Lokalisation visueller und anderer Vorstellungsbilder. Barth, Leipzig, 1912.

Quantitative investigation of the relation between anschaulich and unanschaulich contents of consciousness; paper before the American Psychological Association, December 1912; Abstract: *Psychological Bulletin*, vol. 10, February 15, 1913.

Quantitative Untersuchungen über das Verhältnis anschaulicher und unanschaulicher Bewusstseinsinhalte: *Zeitschrift für Psychologie*, vol. 65, July 1913.

EDUCATION

ELLWOOD PATTERSON CUBBERLEY:

Articles on state school systems and state and city school administration: Monroe, *Cyclopedia of Education*, vol. 3, 1912, vol. 4, 1913. Macmillan, New York.

California system of high school support: *Proceedings of High School Conference*, 1912; *University of Illinois Bulletin*, vol. 10, no. 19, February 1913.

Reorganization of the State Board of Education: *Sierra Educational News*, vol. 9, January 1913.

Report of the Committee of the National council of education on standards of tests for measuring the efficiency of schools or systems of schools (with G. D. Strayer and others): *U. S. Bureau of Education, Bulletin*, 1913, no. 13.

Taxation and distribution: *School and Home Education*, vol. 32, October 1912.

PERCY ERWIN DAVIDSON :

Reliability of standard scores in adding ability (with A. S. Otis) :
Elementary School Teacher, vol. 13, October 1912.

LEWIS MADISON TERMAN :

Binet-Simon scale for measuring intelligence: *Internationales Archiv für Schulhygiene*, vol. 8, August 1912.

Sleep of school children, its distribution according to age, and its relation to physical and mental efficiency (with Adeline Hocking) :
Journal of Educational Psychology, vol. 4, March, April and May 1913.

Sleep of the feeble-minded: *Training School Bulletin*, vol. 8, February 1913.

Survey of mentally defective children in the schools of San Luis Obispo, Calif.; *Psychological Clinic*, vol. 6, October 15, 1912.

Teacher's health; a study in the hygiene of an occupation. Houghton Mifflin, New York, 1913.

Tragedies of childhood: *Forum*, vol. 49, January 1913.

Review of

Gesell, Normal child and primary education: *Journal of Educational Psychology*, vol. 3, November 1912.

JESSE BRUNDAGE SEARS :

Philanthropy, Educational: Monroe, *Cyclopedia of Education*, vol. 4, 1913.

HISTORY

EPHRAIM DOUGLASS ADAMS :

Editor of Correspondence from the British archives concerning Texas, 1837-46, Pts. 4-7: *Southwestern Historical Quarterly*, vol. 16, October 1912, January, April 1913; vol. 17, July 1913.

Editor of Document on the Monroe document, Canning to Vaughan, February 8, 1826: *Proceedings of the Massachusetts Historical Society*, November 1912.

Reviews of

Rose: William Pitt and the great war; Rose, Pitt and Napoleon, Essays and letters: *American Historical Review*, vol. 18, October 1912.

ARLEY BARTHLOW SHOW :

Progress of church unity: *Biblical World*, vol. 42, August 1913.

EDWARD BENJAMIN KREHBIEL :

"Sixty-seven reasons" of the Navy League. An analysis of the arguments set forth in behalf of naval expansion. World Peace Foundation, Boston, February 1913.

Reviews of

Bréhaut, An encyclopedist of the Dark Ages, Isidore of Seville: *American Historical Review*, vol. 18, January 1913; McKilliam, Chronicle of the Popes: *ibid.*; Lea, Day of the Saxon: *Dial*, vol. 53, November 1, 1912; Butler, International mind: *ibid.*, vol. 54, January 16, 1913; Jordan, Unseen empire: *ibid.*; Mahan, Armaments and arbitration: *ibid.*; Lamzus, Human slaughterhouse: *ibid.*, vol. 55, July 16, 1913.

PAYSON JACKSON TREAT:

Awakening of the Orient: *California Outlook*, vol. 14, January 18, 1913.

Need of the Orient: *Spirit of Missions*, July 1913.

Reviews of

Kawakami, American-Japanese relations: *Dial*, vol. 53, October 1, 1912; Koo, Status of aliens in China: *American Political Science Review*, vol. 7, May 1913; Longford, Story of Korea: *ibid.*, vol. 6, August 1912.

HENRY LEWIN CANNON:

Battle of Sandwich and Eustace the Monk: *English Historical Review*, vol. 27, October 1912.

EDGAR EUGENE ROBINSON:

American revolution inevitable: *Sacramento Bee*, February 7, 1913.

The West in the nation: Three editorials in *Collier's Weekly*, 1912-1913.

Review of

Coman, Economic beginnings of the Far West: *Annals of the American Academy of Political and Social Science*, March 1913.

ECONOMICS

IRA BROWN CROSS:

Socialism in California municipalities: *National Municipal Review*, vol. 1, October 1912.

Reviews of

Jenks and Lauck, Immigration problem: *Journal of Political Economy*, October 1912.

DONALD FREDERICK GRASS:

Reviews of

Krommelbein, Massenverbrauch und Preisbewegung in der Schweiz: *American Economic Review*, vol. 2, December 1912; Lichtenfelt, Ueber die Ernährung und deren Kosten bei deutschen Arbeitern: *ibid.*

LAW DEPARTMENT

FREDERIC CAMPBELL WOODWARD:

Law of quasi-contracts. Little Brown & Co., Boston, 1913.

WESLEY NEWCOMB HOHFELD:

Need of remedial legislation in the California law of trusts and perpetuities: *California Law Review*, vol. 1, May 1913.Relations between equity and law: *Michigan Law Review*, vol. 9, June 1913.

JOSEPH WALTER BINGHAM:

Science and the law: *Green Bag*, vol. 25, April 1913.What is the law? *Michigan Law Review*, vol. 11, November-December 1912.

APPLIED MATHEMATICS

WILLIAM ALBERT MANNING:

Primitive groups of class twelve: *American Journal of Mathematics*, vol. 35, July 1913.

ERNEST WILLIAM PONZER:

Some facts and figures concerning some college freshmen: *Sierra Educational News and Book Review*, vol. 8, November 1912.*Reviews of*Auerbach and Rother, eds: Taschenbuch für Mathematiker und Physiker: *Bulletin American Mathematical Society*, vol. 19, October 1912; Berichte und Mitteilungen der Internationalen Mathematischen Unterrichtskommission: Hefte IV-VII, *ibid.*; Vahlen: Konstruktionen und Approximationen: *ibid.*, vol. 19, November 1912.

E. LEONARD LUNDGREN:

Talk on the Philippine Islands: *Journal of the Western Society of Engineers*, vol. 17, December 1913.

PHYSICS

FERNANDO SANFORD:

On characteristic atomic charges and resultant molecular charges: *Physical Review*, vol. 35, October 1912.On convergence frequency in spectral lines: *Astrophysical Journal*, vol. 36, October 1912.On the electrical nature of cohesion: *Physical Review*, vol. 36, March 1913.On the nature of the volta effect: *ibid.*, vol. 35, December 1912.Specific inductive capacity and atomic charges: *ibid.*, vol. 36, June 1913.

CHEMISTRY

JOHN MAXSON STILLMAN:

Basil Valentine: A seventeenth century hoax: *Popular Science Monthly*, vol. 81, December 1912.

EDWARD CURTIS FRANKLIN:

Action of potassium amide on copper nitrate in liquid ammonia solution: *Journal of the American Chemical Society*, vol. 34, November 1912.

Action of potassium amide on thallium nitrate in liquid ammonia solutions: *Journal of Physical Chemistry*, vol. 16, November 1912.

Electrical conductivity of solutions in methylamine and ethylamine; the fluidity of ammonia, methylamine and sulphurdioxide, and the fluidity of certain solutions in these solvents (with F. F. Fitzgerald): *ibid.*, vol. 16, November 1912.

Organic acid amides and their metallic derivatives as acids, and salts of the ammonia system of acids, bases and salts: *Transactions of the Eighth International Congress of Applied Chemistry*, vol. 6, September 1912.

Potassium ammonotitanate (with T. B. Hine): *Journal of the American Chemical Society*, vol. 34, November 1912.

STEWART WOODFORD YOUNG:

On the influence of light on the electric potential of bacterial and other suspensions: *Proceedings of the Society for Experimental Biology and Medicine*, vol. 10, April 16, 1913.

On the possible importance of colloidal protection in certain phases of the precipitin reaction (with Hans Zinsser): *Journal of Experimental Medicine*, vol. 17, no. 4, 1913.

On the failure of union between antigen and precipitin when present in the same serum (with Hans Zinsser): *Proceedings Society for Experimental Biology and Medicine*, vol. 10, 1912.

BOTANY

DOUGLAS HOUGHTON CAMPBELL:

Classification of the Liverworts: *American Naturalist*, vol. 46, November 1912.

Impressions of the flora of Guiana and Trinidad: *Popular Science Monthly*, vol. 82, January 1913.

Morphology and systematic position of *Calycularia radiculosa* (Steph.): *Dudley Memorial Volume, University series*, 1913.

William Russell Dudley: *Dudley Memorial Volume, University series*, 1913.

GEORGE JAMES PEIRCE:

Studies of irritability in plants. III, The formative influence of light:
Dudley Memorial Volume, University series, 1913.

LE ROY ABRAMS:

William Russell Dudley: *Dudley Memorial Volume, University series, 1913.*

The Gymnosperms growing on the grounds of Stanford University:
ibid., 1913.

JAMES MCMURPHY:

Synchytria in the vicinity of Stanford University: *Dudley Memorial Volume, University series, 1913.*

ZOOLOGY

CHARLES HENRY GILBERT:

Age at maturity of the Pacific Coast salmon of the genus *Oncorhynchus*: *Bulletin of the U. S. Bureau of Fisheries*, vol. 32, 1912.

Idem: *Report of Commissioner of Fisheries for British Columbia, 1912.*

Determining age of Pacific salmon by scale markings: *Pacific Fisherman*, vol. 10, November 1912.

Fraser River sockeye run of 1912: *Report of Commissioner of Fisheries for British Columbia, 1912.*

New genus and species of fish from Departure Bay, Vancouver Island:
Contributions to Canadian Biology, 1906-1910, 1912.

Salmon of Swiftsure Bank: *Report of Commissioner of Fisheries for British Columbia, 1912.*

HAROLD HEATH:

New polyclads from Monterey Bay, California (with E. A. McGregor): *Proceedings of Academy of Natural Sciences of Philadelphia*, September 1913.

JOHN OTTERBEIN SNYDER:

Catalogue of the fishes of Japan (with D. S. Jordan and Shigeo Tanaka): *Journal of the College of Science, Tokyo Imperial University*, vol. 33, Art. 1, March 1913.

Description of the Yachats "smelt," a new species of atherinoid fish from Oregon (with D. S. Jordan): *Proceedings of the U. S. National Museum*, vol. 45, 1913.

Fishes of the streams tributary to Monterey Bay, California: *Bulletin of the U. S. Bureau of Fisheries*, vol. 32, 1912.

New species of trout from Lake Tahoe: *U. S. Bureau of Fisheries Bulletin*, vol. 32, 1912.

Notes on *Ranzania makua* Jenkins and other species of rare occurrence on the California coast: *Proceedings of the U. S. National Museum*, vol. 44, April 1913.

Japanese shore fishes collected by the U. S. Bureau of Fisheries steamer "Albatross" expedition of 1906: *U. S. National Museum Proceedings*, vol. 42, 1912.

ENTOMOLOGY AND BIONOMICS

VERNON LYMAN KELLOGG:

Butterflies of the mountain summits: *Sierra Club Bulletin*, vol. 9, June 1913.

Distribution and species-forming of ecto-parasites: *American Naturalist*, vol. 47, March 1913.

Docophori of the owls: *Science*, n. s., vol. 37, January 1913.

Eugenics and militarism: *Atlantic Monthly*, vol. 112, July 1913.

Fruits: Toast at Alumni luncheon: *Stanford Alumnus*, vol. 14, May 1913.

University life in Idaho: *Science*, n. s., vol. 37, May 1913.

University sabbatical and pension system: *Alumni Magazine*, University of Kansas, June 1913.

Review of

Comstock, Handbook of nature study: *Science*, n. s., vol. 37, May 1913.

WALTER KENDRICK FISHER:

Four new genera and fifty-eight new species of starfishes from the Philippine Islands, Celebes and the Moluccas: *Proceedings of U. S. National Museum*, vol. 43, 1913.

GEOLOGY AND MINING

JOHN CASPAR BRANNER:

Address before the Instituto Historico e Geographico Brasileiro at Rio de Janeiro: *Jornal do Commercio*, June 10, 1913; *Diario Oficial*, June 20, 1913.

As areas do Rio Grande do Sul: *Annuario do Estado do Rio Grande do Sul para o anno de 1913*.

The boundaries and area of the Niles cone: *Spring Valley Water Co.: The future water supply of San Francisco*. San Francisco, October 1912.

Caspar Branner of Virginia and his descendants. Privately printed, Stanford University, July 1913.

An early discovery of fullers' earth in Arkansas: *Transactions American Institute of Mining Engineers*, vol. 43, 1913.

Earthquakes and structural engineering: *Bulletin of the Seismological Society of America*, vol. 3, 1913.

Erroneous conclusions on the formation of Livermore Valley: *Spring Valley Water Co.: Future Water Supply of San Francisco*. San Francisco, October 1912.

Estancia beds of Bahia, Sergipe and Alagoas, Brazil: *American Journal of Science*, vol. 35, June 1913.

Fluting and pitting of granites in the tropics: *Proceedings American Philosophical Society*, vol. 52, April 1913.

Geologic work of ants in tropical America: *Smithsonian Report for 1911*, issued 1912.

Inspectoria de obras contra as Seccas: *Jornal do Commercio*, Rio de Janeiro, July 15, 1913.

Os fosséis devonianos do Parana: *ibid.*, June 14, 1913.

Portuguese as well as Spanish: *Springfield Republican*, October 3, 1912.

Report on the geology of Livermore Valley: *Spring Valley Water Co.: Future water supply of San Francisco*. San Francisco, October 1912.

William Russell Dudley; an address delivered at the memorial services held in the University chapel. *Dudley Memorial Volume, University series*, 1913.

Word "selva" in geographic literature: *Science*, vol. 38, August 1, 1913.

Review of

Whitney, Flowing road: *Science*, vol. 37, June 24, 1913.

AUSTIN FLINT ROGERS:

Dahllit (Podolit) von Tonopah, Nevada; Voelckerit, ein neues basisches Calciumphosphat; Bemerkungen über die chemische Zusammensetzung von Apatit und Phosphorit: *Zeitschrift für Krystallographie u. Mineralogie*, vol. 52, March 1913.

Delafossite, a cuprous metaferriite from Bisbee, Arizona: *American Journal of Science*, vol. 35, March 1913.

Observations on the feldspars: *Journal of Geology*, vol. 21, April-May 1913.

Paragenesis of minerals: *Economic Geology*, vol. 7, October-November 1912.

GALEN HOWELL CLEVENGER:

Rapid silver estimation in mill solutions: *The Engineering and Mining Journal*, vol. 95, May 3, 1913.

Shipment of cyanide precipitate: *ibid.*, vol. 95, April 26, 1913.

Study of cyanide precipitates: *ibid.*, vol. 95, February 1, 1913.

CIVIL ENGINEERING

JOHN CHARLES LOUNSBURY FISH:

Earthwork haul and overhaul, including economic distribution. John Wiley & Sons, New York, 1913.

Technic of surveying instruments, a field instructor for the beginner. Privately printed.

MECHANICAL ENGINEERING

WILLIAM FREDERICK DURAND:

On the control of surges in water conduits: *Transactions of the American Society of Mechanical Engineers*, vol. 34, 1912.

GUIDO HUGO MARX:

Analysis of the strength of gear teeth: *American Machinist*, vol. 38, January 1913.

Strength of gear teeth: *Journal of the American Society of Mechanical Engineers*, vol. 34, December 1912.

WILLIAM RANKINE ECKART, JR.:

Discussion of paper by Professor W. F. Durand, "On the control of surges in water conduits," giving a graphical presentation of the problem. Presented at the San Francisco meeting of the American Society of Mechanical Engineers, June 1911: *Transactions of the American Society of Mechanical Engineers*, vol. 34, 1912.

CHARLES NORMAN CROSS:

Discussion on Weymouth: Problems in natural gas engineering: *Journal of American Society of Mechanical Engineers*, vol. 34, August 1912.

Idem: *Transactions of the American Society of Mechanical Engineers*, vol. 34, 1912.

MEDICINE

RAY LYMAN WILBUR:

Early diagnosis of epidemic poliomyelitis: *California State Journal of Medicine*, October 1912.

Urobilin: its clinical significance. Preliminary report (with Thomas Addis): *American Medical Association Journal*, vol. 59, September 21, 1912.

JOSEPH OAKLAND HIRSCHFELDER:

Production of active and passive immunity to the pneumococcus with a soluble vaccine. Preliminary report: *Journal of American Medical Association*, October 12, 1912.

Treatment of gonorrheal and other infections with digestive bacterial extracts. Preliminary report: *Journal of the American Medical Association*, vol. 50, April 15, 1913.

Treatment of tuberculosis with a soluble vaccine: *California State Journal of Medicine*, July 1913.

EMMET RIXFORD:

Brief account of the history of the Lane Medical Library and of Cooper Medical College, read in the opening exercises of the Lane Medical Library, November 3, 1912: *Alumnus*, vol. 14, November 1912.

Contribution to the etiology of congenital dislocation of the hip: *Annals of Surgery*, December 1912.

List of diseases and pathological conditions: Stanford University Medical Department (with Dr. W. Ophüls). San Francisco, 1913.

Sarcoma of uterus: *California State Journal of Medicine*, March 1913.

WILLIAM OPHÜLS:

Chronic lead poisoning in guinea-pigs; its relation to polyserositis: *Proceedings of the Society of Experimental Biology and Medicine*, vol. 10, 1912.

Chronic lead poisoning in guinea-pigs; its relation to chronic nephritis: *ibid.*

List of diseases and pathological conditions (with Dr. E. Rixford). Stanford University Medical Department, San Francisco, 1912.

Relation of gastric and duodenal ulcer to vascular lesions: *Archives of Internal Medicine*, vol. 11, 1913.

ALBERT CORNELIUS CRAWFORD:

Cock's-comb test for the activity of ergot preparations (with J. P. Crawford): *Journal of the American Medical Association*, vol. 61, July 5, 1913.

ANDREW WILLIAM HOISHOLT:

Dream-state of delirium tremens and the inadequacy of the California statutes in not covering certain conditions of irresponsibility for crime, exemplified in an unusual case: *California State Journal of Medicine*, vol. 10, October 1912.

HARRY EVERETT ALDERSON:

Recent conclusions regarding syphilis: *California State Journal of Medicine*, September 1912.

The skin reaction in syphilis: *ibid.*, October 1912.

THOMAS ADDIS:

Bactericidal and hemolytic powers of "pariffin" plasma and serum: *Journal of Infectious Diseases*, vol. 10, 1912.

Urobilin: its clinical significance. Preliminary report (with R. L. Wilbur): *Journal of the American Medical Association*, vol. 59, September 1912.

WALTER WHITNEY BOARDMAN:

Stereo-roentgenography in pulmonary tuberculosis: *California State Journal of Medicine*, July 1913.

WALTER FRANK SCHALLER:

Progressive interstitial hypertrophic neuritis of childhood of Dejerine and Sottas: *Archives of Internal Medicine*, vol. 10, October 1913.

Salvarsan in syphilitic disease of the nervous system: *California State Journal of Medicine*, October 1913.

Spasmodic torticollis: *Journal of the American Medical Association*, vol. 60, May 1913.

Two cases of cerebellar disease, followed by autopsy: *California State Journal of Medicine*, July 1913.

HANS ZINSSER:

On anaphylatoxins and endotoxins of the typhoid bacillus: *Journal of Experimental Medicine*, vol. 17, no. 2, 1913.

On the possible importance of colloidal protection in certain phases of the precipitin reaction (with S. W. Young): *ibid.*, no. 4, 1913.

The failure of union between antigen and precipitin when present in the same serum (with S. W. Young): *Proceedings Society for Experimental Biology and Medicine*, vol. 10, 1912.

Leland Stanford Junior University Publications

1914

Trustees' Series

No. 26

Annual Report of the President
of the University

for the Twenty-third Academic Year
ending July 31, 1914

this being the eleventh report submitted, to which
are appended the annual reports of the
Chancellor and Treasurer

UNIVERSITY
LIBRARY
PRINCETON, N.J.

Stanford University, California

Published by the University

1914

TRUSTEES' SERIES

NO.	DATE
1. The Leland Stanford Junior University. A pamphlet of information.....	(No date)
2. Address of Jane Lathrop Stanford to the Board of Trustees	February 11, 1897
3. Address of Jane Lathrop Stanford to the Board of Trustees	June 1, 1897
4. Address of Jane Lathrop Stanford to the Board of Trustees	May 31, 1899
5. Address of Jane Lathrop Stanford to the Board of Trustees	October 3, 1902
6. Address on "The Right of Free Speech," by Jane Lathrop Stanford to the Board of Trustees.....	April 25, 1903
7. Petition filed in proceedings to establish and construe University Trusts	June 16, 1903
8. Decree in proceeding to establish and construe University Trusts	July 3, 1903
9. Inaugural address of Jane Lathrop Stanford as President of the Board of Trustees	July 6, 1903
10. Organization of the Faculty of the University.....	March 31, 1904
11. Report of the Organization Committee of the Trustees upon the Organization of the University Faculty	March 31, 1904
12. First Annual Report of the President.....	December 31, 1905
13. Second Annual Report of the President.....	April 30, 1906
14. Third Annual Report of the President.....	December 31, 1906
15. Fourth Annual Report of the President.....	December 31, 1907
16. Trustees' Manual	November 1, 1908
17. Fifth Annual Report of the President	December 31, 1908
18. Sixth Annual Report of the President	December 31, 1909
19. Seventh Annual Report of the President.....	December 31, 1910
20. Eighth Annual Report of the President.....	December 31, 1911
21. Ninth Annual Report of the President.....	December 31, 1912
22. Addresses of Timothy Hopkins, Emmet Rixford and David Starr Jordan at the Dedication of the Lane Medical Library Building.....	January 1, 1913
23. Tenth Annual Report of the President.....	July 31, 1913
24. Addresses at the Installation of John Casper Branner, LL.D., as President of the University	October 1, 1913
25. The Perfecting of the Promise, a sermon by Rev. Francis G. Peabody, D. D., March 1, 1914, commemorating the ninth anniversary of the death of Jane Lathrop Stanford; The Founders of the University, an address by Hon. William W. Morrow, LL.D., Founders' Day, March 9, 1914	July 31, 1914
26. Eleventh Annual Report of the President	October 30, 1914

TABLE OF CONTENTS

	PRESIDENT'S REPORT	PAGE
Trustees		5
Faculty		
Leaves of absence		5
Resignations		6
New appointments		6
Promotions		7
Salaries and tenure		7
Death of Professor Newcomer		9
Publications		9
Alumni		
Graduates by departments		10
Students		
By major subjects		12
Scholarship		13
Student control		13
The honor system		13
Fraternities		13
Sororities		14
Fraternity and sorority homes		14
Departments		14
Medical school		16
Vaughan report		17
Special lectures		20
Gifts		21
Chancellor's report		22
Treasurer's report		23
	APPENDICES	
I. Gifts		28
II. Departmental reports		
Anatomy		33
Applied mathematics		34
Bacteriology and immunity		35
Botany		36
Chemistry		37
Civil engineering		41
Economics		42

Departmental reports—Continued.

Education	43
Electrical engineering	45
English literature	46
English philology	48
Entomology and bionomics	49
Geology and mining	50
German	52
Graphic art	53
Greek	53
History	54
Latin	57
Law	57
Mathematics	59
Mechanical engineering	60
Medicine	61
Lane hospital	63
Medicine	65
Obstetrics and gynecology	68
Pathology	68
Pharmacology	69
Surgery	70
Philosophy	71
Physical training	72
Encina gymnasium	72
Roble gymnasium	73
Physics	74
Physiology and histology	75
Psychology	77
Romanic languages	77
Zoology	79
III. Reports of committees	
Student affairs	80
Public health	81
Delinquent scholarship	82
Vocational guidance	86
IV. Reports of executive officers	
Registrar	87
Librarian	96
Lane library	101
Dean of women	102
Appointment secretary	103
Student adviser	104
Chaplain	105
Museum	107
V. Faculty publications	109

PRESIDENT'S REPORT.

1913-14

TO THE HONORABLE BOARD OF TRUSTEES:

I have the honor to make the following report for the year ending July 31, 1914. The accompanying appendices give detailed information regarding each of the university departments.

Trustees

While recognizing that it is not necessary to inform your honorable board of changes affecting the personnel of the board itself, I deem it proper, as a matter of historical record, to mention the death of Trustee Charles G. Lathrop, on May 24, 1914. Mr. Lathrop had been a member of the board since 1893, at which time also he became treasurer and business manager of the university. Trustee Vanderlynn Stow has been made treasurer and business manager to fill the vacancy.

Faculty

During the year the following members of the faculty were absent on leave:

Leaves of Absence	Professor Ephraim Douglass Adams, of the department of history; Associate Professor Clifford Gilmore Allen, of the department of Romanic languages; Professor Joseph Walter Bingham, of the department of law; Professor Hans Frederick Blichfeldt, of the department of mathematics; Assistant Professor William Dinsmore Briggs and Instructor Van Wyck Brooks, of the department of English; Assistant Professor Walter Kenrick Fisher, of the department of zoology; Dr. David Starr Jordan, chancellor of the university; Assistant Professor Mary Isabel McCracken, of the department of entomology; Professor Augustus Taber Murray, of the department of Greek; Instructor Axel Nielsen, of the department of electrical
------------------------------	--

engineering; Associate Professor Frederick John Rogers, of the department of physics; Associate Professor John Otterbein Snyder and Assistant Professor Edwin Chapin Starks, of the department of zoology; Instructor Chloe Lesley Starks, of the department of graphic art; Professor Henry Waldgrave Stuart, of the department of philosophy, and Professor Fred-eric Campbell Woodward, of the department of law.

Professor Warner Fite, of the University of Indiana, served as acting professor of philosophy during the first semester, in the absence of Professor Stuart; Professor Allen Marshall Kline, of the College of the Pacific, acted as lecturer in history in the absence of Professor Adams, and Mr. John William Davis substituted for Mr. Nielsen in electrical engineering.

The following members of the faculty resigned during the year to accept positions in other institutions:

Resignations

Associate Professor Albert Léon Guérard, of the Romanic languages department, who went to Rice Institute, at Houston, Texas; Professor Emlin McClain, of the department of law, who returned to the University of Iowa, as dean of its law school; Associate Professor George Holland Sabine, of the department of philosophy, who becomes Professor of Philosophy in the University of Missouri; Associate Professor Colbert Searles, of the department of Romanic languages, who goes to the University of Minnesota as associate professor; and Assistant Professor Royce Reed Long, who takes a position in the State Teachers' College of Colorado.

The following have been appointed to positions in the faculty for the coming year:

New

Appointments

Professor Raymond MacDonald Alden, of the University of Illinois, as professor of English; Mr. Harold Chapman Brown, of Columbia University, as assistant professor of philosophy; Professor John Begg Cheadle, of Oklahoma University, as acting professor of law; Mr. Frederick B. Garver, of Chicago University, as instructor in economics; Mr. Gabriel Grojean, of the University of Pennsylvania, as associate professor of French; Miss Charlotte A. Knoch, of Pasadena, as instructor in German;

Mr. Stanley A. Smith, of Seattle, Washington, as assistant professor of French; Mr. Hector Galloway Spaulding, of Chicago, as assistant professor of law; and Dr. Herbert Rowell Stolz, director of the men's gymnasium and medical adviser of men.

Assistant Professor Everett Parker Lesley, of the department of mechanical engineering, was made associate professor;

Promotions Instructors William Henry Sloan, in chemistry, and Robert Edouard Pellissier, in Romanic languages, assistant professors; and Dr. John Edgar Coover, assistant professor of psychology, while still retaining the fellowship in physical research under the Thomas Welton Stanford foundation.

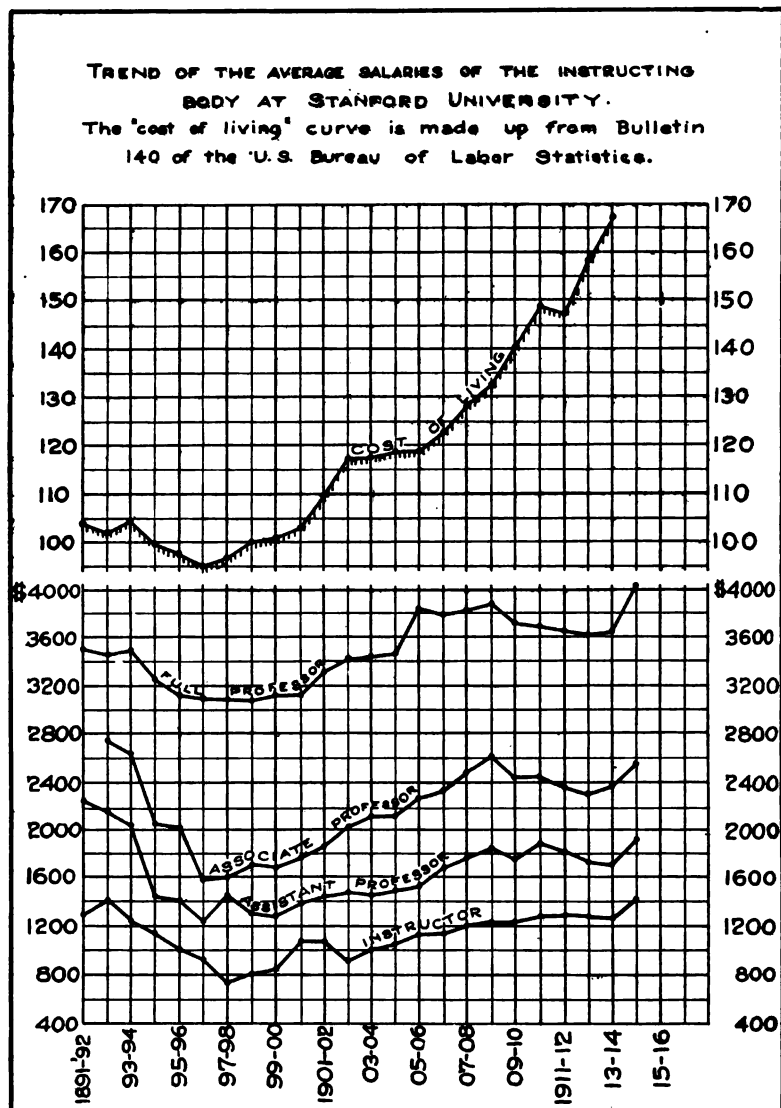
The funds at the disposal of the President have not been sufficient to admit of other desirable promotions, for the reason that, with a fixed system of salaries, promotions can only be made when there is money to provide the salary appropriate to the higher rank.

An important step was taken affecting salaries and tenure in the action of the board on January 30, 1914, fixing a uniform scale of salaries by rank for members of the university faculty. This schedule may be here made a matter of record:

SALARIES					
Rank	Minimum	Intermediate	Maximum	Tenure	
Instructor	\$1,200	\$1,400	\$1,600	\$1,800	1 year
Assistant Professor.....	2,000	2,250	2,500	2,750	3 years
Associate Professor	2,750	3,000	3,250	3,500	5 years
Full Professor	3,500	3,750	4,000	4,250	} At will of Trustees
Pre-eminent Professor	4,250	4,500	5,000	6,000	

Because of inequalities previously existing, it is not possible to put this schedule into effect at once, but an effort will be made to reach it within three years, and future appointments and promotions will be governed by it.

In this connection I call attention to the trend of average salaries in the faculty from the opening of the university, with reference to the cost of living, as shown in the accompanying diagram.



The university community suffered a notable loss in the death of Professor Alphonso Gerald Newcomer, which occurred on September 13, 1913, in the forty-ninth year of his age. Professor Newcomer had been connected with the department of English from the opening year of the university and was its executive head since 1906.

In an appendix to this report will be found a list of publications by members of the faculty which may be regarded as an index to their activities during the year in the several lines of work commanding their interest.

Alumni

In the twenty-three years of its existence the university has graduated approximately five thousand students. The roll shows 4,441 undergraduate degrees granted and 664 advanced degrees, some of the latter granted to persons receiving the undergraduate degree also. The accompanying table gives the record year by year by departments from the beginning.

The active interest of the alumni in the university is shown by the existence of Stanford clubs in all the important cities of the Pacific coast and in the principal cities of the east. This interest has taken a very tangible form in the building upon the university campus of the two union buildings, one for men and the other for women, now approaching completion. The several fraternity and sorority homes upon the campus are also largely owing to contributions made by alumni. The departmental collections and libraries are indebted to individual alumni for contributions of specimens, materials and books of great value and importance. This form of assistance may be expected to increase in the future.

Students

The total registration of students for the year was 1916. Of these 1383 were from the state of California, 473 from other states of the union and fifty came from foreign countries. In the twenty-three years of the university, a total of 32,320 students have been registered. The accompanying table gives the details of this registration by departments.

The report of the committee on delinquent scholarship, which appears at length in an appendix to this report, shows a gratifying general improvement in scholarship for the year. The record of failures in this respect in recent years is as follows:

Year	PERCENTAGE OF FAILURES	
	Men	Women
1910-11	13	3.0
1911-12	11	2.5
1912-13	13.5	2.0
1913-14	10	1.8

The greatest gain is to be found in the fraternities.

The past year has been the second year of successful operation of student self-government. The plan has been more fully worked out and its publication in the form of a manual for circulation among the students will insure a clearer understanding of the movement and a more intelligent interest in it.

Much interest has been awakened in this subject, although the time has not seemed ripe for its general adoption. Important among the factors contributing to this growing interest was an address delivered before the student body by Chancellor J. H. Kirkland of Vanderbilt University, Nashville, Tennessee, an institution in which the honor system has been successfully inaugurated.

For some years the low scholarship among members of the college fraternities has subjected such organizations to severe criticism. The national organizations all over the country have lately interested themselves in their various chapters with the result that a concerted effort is being made to improve the scholarship and general standing of the college chapters. This effort is a wholesome one and there is apparent already a decided improvement in the standing of the fraternity men.

In matters of administration the fraternities have as a rule coöperated frankly with the constituted authorities in the maintenance of order.

It is worthy of note that the scholarship of the members of sororities is quite as good as that of the young women outside the sororities. Each sorority house is obliged to have a matron or house mother in attendance at all times. It does not seem wise to permit of the building of more sorority houses on the campus. The number of women is limited to five hundred, and the accommodations now available provide for practically the whole number of women. Additional houses would necessarily have the effect of emptying Roble Hall, or of so reducing the numbers in the houses already built that they could not be kept up.

More than six hundred students belonging to fraternities and sororities are housed on the campus in buildings which for the most part are owned and kept up by the organizations themselves. Of the eighteen fraternities occupying houses, sixteen own their own buildings.. Eight of the sororities own their houses. These fraternity and sorority buildings are substantially built and attractive in appearance. They represent a total value of approximately \$250,000, and contribute effectively toward the housing of the student body at the university.

Sororities

**Fraternity
and Sorority
Homes**

Departments

Under this head mention will be made only of those departments in which changes have occurred during the year that seem worthy of special consideration.

The restoration of the memorial church permitted the resumption of services in it after the first of October. The students have shown their appreciation of this privilege by large attendance. Dr. Francis G. Peabody of Harvard University served as special university preacher for six weeks in January and February, and Rev. Francis J. McConnell, bishop of the Methodist church, of Denver, Colorado, for three weeks in April. Dr. Peabody and Bishop McConnell also gave courses of week day lectures during their stay at the university.

Church

The year was marked by the completion of the buildings for the hydraulic and strength of materials laboratories, and their equipment. This has made a notable addition to the facilities of the work in engineering.

**Civil
Engineering**

The department of education has been enabled through the generosity of Miss Charlotte S. Playter of Oakland to establish a fellowship for the study of backward children, the income from ten thousand dollars being available for five years for this purpose.

Education

The facilities of the department of electrical engineering have received an important addition during the year in the building and equipment of its new high tension laboratory.

**Electrical
Engineering**

The Board of Trustees has purchased Mr. Branner's private geological library, making it a part of the university library, although it will remain in its present location in the geology building. This collection contains over 30,000 volumes, maps and pamphlets.

Geology

Dr. Hempl, head of the department, has been granted leave of absence for the academic year 1914-15 to give him freedom to prepare for publication his work on the Etruscan inscriptions.

German

By action of the trustees, taken on April 24, 1914, graphic art was made a division of the department of education. Students whose major subject has been selected in graphic art will be graduated as of that department to the expiration of the academic year 1915-16, after which time no further degrees will be conferred in graphic art.

Graphic Art

Professor Murray was absent during the year engaged on a translation of the Odyssey for the Loeb classical library.

Greek

Professor Adams, during his absence in the second semester, collaborated with Charles Francis Adams, of Boston, in the preparation and publication of certain historical papers. The lectures of Dr. Oliveira Lima, of Brazil, delivered here in 1911 upon the evolution of Brazil and of Spanish and Anglo-Saxon America, received publication under the editorship of Professor Percy A.

History

Martin, in the University Series of publications. These lectures were also published in Paris in the Portuguese language. The lectures delivered by Dr. Lima at some of the leading universities of this country led to his being made professor of history and economics of Latin America at Harvard University.

Dr. Fairclough of the department of Latin was offered the headship of the department of classics at the new University of British Columbia, Vancouver, B. C., but we have fortunately been able to keep him with us.

Professor McClain resigned to accept the position of dean in the law school of the University of Iowa, and Professor Hohfeld will spend the year 1914-15 at Yale University on leave of absence.

Professor Stuart was absent during the year and in June Associate Professor Sabine accepted a position in the University of Missouri. Dr. Sabine's place has been filled by the appointment of Dr. Harold Chapman Brown, a graduate of Williams College and of Harvard University. He is highly recommended by those who know him and his work.

Dr. John Edgar Coover, who has held the Thomas Welton Stanford fellowship in psychical research during the past two years, has been made assistant professor of psychology, still retaining his fellowship.

Associate Professor Searles has taken a position in the University of Minnesota and his place has been filled by the appointment of Mr. Stanley A. Smith, a graduate of Stanford University and professor of Romanic languages at Reed College.

The Medical School

During the past year the question of the future policy of the university toward medical instruction has received much attention. The cost of maintaining a first-class medical school is necessarily heavy and is likely to grow steadily in the immediate future. The income of the university is more or less definitely fixed and is closely approached by present needs. Regular departments of instruction long

established must be maintained. The question with which the university is face to face is whether it can afford to maintain and develop a strong medical school.

A possible solution of the problem seemed to lie in the direction of a combination with the University of California in a joint medical school. Preliminary conferences disclosed a willingness to effect such a union and gave promise of a favorable issue. Difficulty, however, arose over the matter of control in the management of the combined school. The regents of the state university felt that the authority of the state vested in them could not be transferred to a joint institution in which the majority control did not rest with them. Your honorable board held that your responsibilities under the trusts you are called upon to administer did not permit of your turning over property or income to be managed and disbursed by an institution in which Stanford University did not have at least an equal voice. This difficulty proving insuperable, the negotiations for a union of the two medical schools came to an end.

During the progress of the discussion your honorable board provided for expert advice not merely upon the question of union but upon the question of our carrying on a separate medical school in case the union did not take place. In accordance with this action, Dr. Victor C. Vaughan, dean of the medical school of the University of Michigan, was asked to investigate the situation and give us the benefit of his counsel. The question of union had been definitely settled before Dr. Vaughan reached the university and his report became, therefore, one of advice upon the maintenance and development by Stanford University of a separate medical school. His report is as follows:

**Vaughan
Report**

ANN ARBOR, MICH., June 9, 1914.

*President J. C. Branner,
Leland Stanford Junior University,
Palo Alto, California.*

DEAR DOCTOR:

In compliance with your telegraphic request I have visited Palo Alto and San Francisco and inspected the libraries, laboratories and hospitals

of Stanford University. The laboratories of chemistry (general, physical, inorganic, organic and physiological), biology, histology, neurology and physiology are well housed, adequately equipped and exceptionally well manned. In all these, high grade work is being done. The laboratories of bacteriology and anatomy need better housing and I understand that this is to be provided in the near future. But in the buildings now occupied, most excellent work is being done. In fact, each of the scientific departments at Stanford is under the direction of an eminent man supplied with able and enthusiastic assistants and with necessary equipment. There is abundant evidence even in a hasty inspection that the appropriations have been economically and wisely expended and that good work is being done both in instruction and in research. I wish to compliment the trustees and president upon the evident wisdom which they have displayed in the development of these departments of the university. What I have said of the scientific branches is equally true of the other departments of Stanford University. Although one of the youngest of the higher institutions of learning in this country, Stanford ranks as one of the best in all departments, both scientific and humanistic. In all branches it represents the highest aims and ideals. While I am not fitted to express anything more than a general opinion as to other than scientific education, I wish to emphasize the fact that all learning is one and the same spirit should pervade the whole. This I believe to be true at Stanford. It furnishes a wholesome atmosphere in which the student can grow whatever special line of training he may follow later. The greatest need of our country is the man whose fundamental knowledge is broad and comprehensive and whose special training is exact. No man can have useful knowledge of a part unless he has general knowledge of the whole. The working of the part must be in harmony with the movements of the whole, otherwise disaster is the result. While I am especially interested in medical education, I recognize the fact that it is futile to try to develop a good medical man out of one whose fundamental training has not been sound. The young man who has learned to work with the right spirit, whether it be in Greek or biology, in philosophy or chemistry, will enter medicine, law or any profession in the right frame of mind and will be likely to prove an honor in his chosen profession. In his preliminary college training the prospective medical student should not be confined to the physical or biological sciences. It is desirable that he know the classics, history and philosophy and it is most desirable that the training that he gets along these lines should be of the highest grade. I believe that Stanford University furnishes suitable conditions for the development of the young man who is going into medicine. Therefore, I hope that the medical work done at Palo Alto may continue. If the medical school should be closed, this would relieve Stanford of only one of the laboratories at Palo Alto. Physics, chemistry, biology, physiology, histology, embryology, neurology and bacteriology must be taught and research work in these branches must be done in a university of the high rank Stanford holds. Closing the medical school would give

only trifling financial relief to the university. I therefore recommend that the premedical and medical work now done at Palo Alto be not only continued but be developed as fast as the finances of the university permit. I make this recommendation not only for the good of the medical school, but, as I believe, in the interest of the university as a whole. If the medical department should be discontinued, anatomy is the only subject which could be dropped at Palo Alto and even then this should not be done. Anatomy is one of the great and fundamental biological sciences and even human anatomy should be taught in a great scientific university. Anatomy is no longer taught as a mere foundation for medicine and surgery. It includes the development of structure from the lowest to the highest forms of life.

I went to San Francisco and made an inspection of the library, hospital and laboratories of the medical school.

The Lane library is one of the best medical libraries in the country. It is supplied with practically all the best medical journals so arranged as to be most available to members of the faculty and students. Its location in regard to the hospital and laboratories is quite ideal. It is worth much to both the clinical and the research man to have at his hand the best contributions of the world. When a problem comes up for solution the first thing to learn is to ascertain what has already been done along this line. A medical school without a library is like a boat without a pilot, and much time is likely to be lost in drifting. The medical department of Stanford is fortunate in the possession of its library.

While the present hospital building is somewhat out of date it is, so far as I can see, admirably managed both in caring for the sick and in the instruction of students. The out-patient department, systematized as it is, is both a great, broad and needful charity and at the same time a source of varied and comprehensive instruction to students. The addition soon to be made to the hospital will modernize the institution. It will bring more pay patients to the institution and thus furnish the funds with which the less fortunate can be cared for. I was greatly pleased with the management of the hospital. The laboratories in the hospital are ably conducted and fairly well equipped. Some of them will probably have enlarged and improved quarters when the addition is made to the hospital.

As I understand, the total cost of the medical department is now about one hundred thousand dollars per year. This cost will slowly increase. Notwithstanding this fact, I strongly urge that the medical school be not only continued but be developed. In its development the quality of its work should be constantly held in mind. The number of medical students should be kept small. Quality and not quantity should be the aim. I believe that in the near future the medical department will be a source of strength to the university in many ways. First, in the importance of the research done and the benefits that such research will confer on the race. Within the past thirty years the average human life has been increased nearly fifteen years and the whole of life has been made

more comfortable. This is a work to which a great university should contribute. The opening of the Panama Canal will bring to the Pacific Coast many health problems which can be best solved in such a school of instruction and research as I believe Stanford will develop. Second, I am firm in the belief that the medical school will attract large donations, both for research and the clinical work. Philanthropists will see that the best service they can render lies in the direction of improved health conditions. Third, medicine is now attracting to its ranks many of the best of our young men and this will be a source of strength to the university.

Lastly, I come to the matter on account of which I was called to visit you. The time may come when it may be wise to consolidate the two university medical schools of San Francisco, but I do not believe that this would be wise at present. Stanford, from what I can learn, can afford to develop its medical school without material hindrance in the growth of other branches and I believe that this is the wise thing to do.

I am aware of the fact that a hasty visit, such as I have made, may give erroneous impressions and I would not have you attach any great importance to this report, but I have tried to look at matters from a broad viewpoint and to hold constantly in mind the good of Stanford University as a whole. I have considered it unnecessary to go into financial or other details with which you are much more familiar than I am.

In conclusion I wish to thank you, . . . and Dr. Wilbur and other members of your faculty for the many courtesies shown me and to express the hope that the growth of Stanford University during the past quarter of a century, phenomenal as it has been, may be surpassed in its future developments.

With great respect, I am,

Yours most respectfully,

V. C. VAUGHAN.

In view of Dr. Vaughan's report and the difficulties standing in the way of a union of the two schools it only remains for us to go forward with the medical school as it is.

Special Lectures

The West memorial lectures on immortality for 1913-14 were delivered in the month of October by Dr. Hastings Rashdall, of Oxford University, England, his subject being "Is Conscience an Emotion?" The lectures will be published, as in the case of the two previous series, by Houghton-Mifflin Company of Boston.

The Lane medical lectures before the medical school in San Francisco were given in September, 1913, by Sir Ed-

ward Alfred Schäfer of the University of Edinburgh, on the subject of "Internal Secretion."

Mention has already been made of special university lectures given by Dr. Peabody and Bishop McConnell, preachers in the memorial church.

Gifts

Attention is directed to the growing list of gifts due to private generosity which has marked the year. A detailed list will be found appended to this report. For all of these gifts grateful acknowledgment is here made.

The departmental and other special reports follow.

Respectfully submitted,

JOHN CASPER BRANNER,

President.

October 30, 1914.

CHANCELLOR'S REPORT.

The office of chancellor was created in May, 1914, the work of the president being divided to that end. Dr. Jordan was appointed to the new position, the appointment dating from August 1, 1913.

Chancellor Jordan devoted the whole academic year to studies of the standing incentives to war in Europe, and to lectures in opposition to militarism and its legacies of exhaustion, financial and biological. In the month of June, 1913, about thirty lectures were given in the United States and Canada before university audiences and before chambers of commerce. In Great Britain thirty-seven lectures were given in the principal cities and in most of the universities of England and Scotland. Single lectures of similar tenor, were given in German, in Frankfurt, Munich, Stuttgart, Mannheim and Wiesbaden, as also in Paris, Hyeres, Ghent, Sofia, Salonika and Constantinople. Lectures were also given in Sydney, Melbourne and Adelaide, in Australia.

While in Europe, Dr. Jordan attended numerous congresses, notably the World Peace Congress at The Hague, the congress of direction of secondary schools at Brussels and Ghent, the congress of free religions in Paris, the "Friedensfreunde" at Nuremberg, the committee of international conciliation at Paris, and the Norman Angell convention at "Old Jordans," the home of William Penn.

Special detailed studies were made of the political situation in Alsace-Lorraine, in the several Balkan states, and in Ulster. The records of these studies have been published in various journals in the United States and in England.

On the first of August, 1914, at the outbreak of the war, Dr. Jordan was in Cambridge, England. On account of the use of transatlantic steamers as military transports he was unable to leave England until September 12th.

DAVID STARR JORDAN,
Chancellor.

TREASURER'S REPORT.

LELAND STANFORD JUNIOR UNIVERSITY TREASURER'S BALANCE SHEET—FISCAL YEAR ENDING JULY 31, 1914

Investment Assets

Bonds—

General endowment	\$15,389,958.50
Capital increase since endowment.....	1,095,469.18
Jewel fund (book fund).....	500,000.00
Thos. Welton Stanford endowment.....	50,000.00
Lane medical library fund.....	31,000.00
Medical library endowment.....	20,000.00
Moses Hopkins memorial.....	10,000.00
Lane medical lecture fund.....	20,000.00
W. J. Dickey scholarship fund.....	10,000.00
Surplus income from jewel fund.....	11,421.30
Capital stocks of corporations—general endowment.....	121,221.00
Mortgage and loans—	
General endowment	2,379,440.00
Capital increase since endowment.....	400,000.00
Medical library endowment.....	15,000.00
Lane medical library fund.....	20,000.00
West endowment	10,000.00
Notes receivable	400.00
Amortization	20,932.53
Real estate and improvements—	
General endowment	2,043,877.22
Palo Alto farm	145,886.17
Lane medical library fund.....	66,509.87
Lane medical library building and furniture (loan from capital increase since endowment)	111,673.28
Lane medical library expense (loan from capital increase since endowment)	4,971.41
University houses, cottages and stores.....	188,297.27
Subdivision roads, sewers and improvements.....	33,879.89
Water system	92,503.99
Campus lighting system	920.63
Manufacturing and farm plants.....	110,074.26
Jewels	35,228.35
Cash in banks for investments.....	133,073.05

Current Assets

Cash and cash funds.....	130,264.42
Accounts receivable	21,830.74
Accrued interest	139,632.45
Unearned insurance	7,854.13
General inventories	101,035.06
Farm inventories	633,116.25
	<hr/>
	\$24,105,520.95

Permanent Endowments

Leland and Jane Lathrop Stanford endowment for general maintenance	\$20,864,835.18
Jane Lathrop Stanford endowment (jewel fund) for books....	500,000.00
Capital increase since endowment.....	1,729,796.46
T. W. Stanford endowment for psychic investigation.....	50,000.00
J. Henry Meyer endowment for medical library books.....	2,500.00
Antoine Borel endowment for medical library books.....	2,500.00
Edw. Coleman endowment for medical library books.....	2,500.00
Luther J. Holton endowment for medical library books.....	500.00
Henry Lee Dodge memorial for medical library books and binding	5,000.00
Life membership subscriptions for medical library maintenance	5,200.00
Lane medical lecture fund.....	20,000.00
Chas. G. Lathrop endowment for medical library books.....	5,000.00
Dr. A. Barkan endowment for medical library books.....	10,000.00
Henry Gibbons, Jr., library of obstetrics and gynecology endowment	1,926.60
Sundry endowments for Lane medical library.....	82.50
Moses Hopkins memorial for hospital bed.....	10,000.00
R. F. West endowment for lectures on immortality.....	10,000.00
W. J. Dickey scholarship fund.....	10,000.00

Special Funds

The Levi Cooper Lane library of medicine and surgery fund..	115,816.09
Thos. Welton Stanford museum restoration fund.....	53,275.98
Surplus income from jewel fund.....	11,421.30
Reserve for employers' liability insurance.....	11,702.71

Current Liabilities

Accounts payable	92,196.19
Scholarship and miscellaneous funds.....	1,932.79
Unexpended income from special funds.....	9,649.82
University club building sinking fund.....	10,125.84
Building and depreciation fund.....	123,046.46
Reserve for farm improvements.....	127,096.87
Reserve for hydraulic laboratory equipment.....	12,228.11
Emergency reserve	200,000.00
Surplus	107,188.05
	<hr/>
	\$24,105,520.95

Certified correct.

CHAS. F. USINGER,
Auditor, Finance Committee.

LELAND STANFORD JUNIOR UNIVERSITY
STATEMENT OF INCOME AND EXPENDITURES—
AUGUST 1, 1913, TO JULY 31, 1914

Income

From general funds—

Interest on bonds and loans.....	\$857,407.30
Rents	69,997.55
Farm operations year 1913.....	262,091.53
Miscellaneous	6,688.01
Water system profit.....	2,245.30

From special funds and special endowments—

Jewel fund	25,500.00
Chas. G. Lathrop endowment for medical library books....	275.00
Adolph Barkan endowment for medical library books.....	549.99
Antoine Borel endowment for medical library books.....	134.17
J. Henry Meyer endowment for medical library books.....	134.16
Edward Coleman endowment for medical library books....	134.17
Luther J. Holton endowment for medical library books....	26.79
Life membership subscriptions for medical library maintenance	271.83
Levi Cooper Lane library fund.....	2,669.99
Lane medical lecture fund.....	1,000.00
Moses Hopkins memorial for hospital bed.....	500.00
Henry L. Dodge memorial for library books.....	250.00
Henry Gibbons, Jr., library of obstetrics and gynecology endowment	99.63
Raymond Fred West endowment for lectures on immortality	608.10
Chas. G. Lathrop for books on California.....	500.00
Thos. W. Stanford endowment for psychic investigation	3,000.00
W. J. Dickey scholarship fund.....	408.34
Japanese educational fund.....	1,400.00

Total income 1913-1914.....	\$1,235,891.86
-----------------------------	----------------

Balances forward from 1912-1913—

Balance special funds.....	\$8,352.92
Balance building fund and depreciation account.....	160,881.65
Balance hydraulic laboratory equipment fund.....	41,675.90
Balance emergency reserve.....	200,000.00

\$1,646,802.33

Expenditures

Professors' salaries	\$424,009.10
Departmental equipment	26,186.01
University library books.....	25,862.09
Lane medical library books.....	12,060.64
Departmental supplies, heat, light, janitors, etc., less laboratory and incidental fees.....	59,125.96
Treasurer's and superintendent's offices.....	48,300.80
Taxes	60,399.93
Insurance and reserve for employers' liability.....	12,636.36
General expense and equipment.....	22,623.01
Maintenance of grounds.....	33,474.48
Maintenance and alterations of university buildings.....	37,789.34
Maintenance of cottages and dormitories.....	34,231.22
Museum	2,444.66
Church	11,184.06
Loss on Lane hospital	6,641.16
Loss on rock crusher.....	2,340.44
Church construction	53,718.05
Hydraulic laboratory equipment	29,447.79
New medical school plant.....	79,769.21
New library building	279.30
Demolishing old library, gymnasium and museum wings.....	4,933.88
Farm improvements	80,135.53
<hr/>	
Total expenditures 1913-1914	\$1,067,593.02
Balances to 1914-1915—	
Balance building fund and depreciation account.....	\$123,046.46
Balance hydraulic laboratory equipment fund.....	12,228.11
Balance reserve for farm improvements.....	127,096.87
Balance emergency reserve	200,000.00
Balance surplus	107,188.05
Balance 1914-1915 unexpended balance special funds.....	9,649.82
<hr/>	
	\$1,646,802.33

Certified correct.

CHAS. F. USINGER.
Auditor, Finance Committee.

APPENDIX I

GIFTS TO THE UNIVERSITY

GENERAL

Barber, Mrs. Anna M., of Alameda, \$200. as an addition to the William Burton Barber loan fund for the assistance of students.

Faymonville, Bernard; Harris, M. B., and Walrond, E. A., trustees of the estate of the late W. J. Dickey, \$10,000, as a fund for the maintenance of scholarships open to students from the city and county of Fresno. The conditions of this gift are given in the following announcement:

The trustees of the university have received from the estate of the late W. J. Dickey of Fresno, the sum of ten thousand dollars for the establishment of the Dickey Scholarship Fund "to aid young men from Fresno county, preferably from the City of Fresno, to make their way through Stanford University."

The selection and appointment of the W. J. Dickey scholars shall be made by the president upon the recommendation of the faculty committee on admission and advanced standing, subject to the provision that the trustees under the will of Mr. Dickey shall be consulted and their advice taken before any appointment is made. No one shall be appointed to a Dickey scholarship unless he shall have been a resident of the county of Fresno, and preferably of the City of Fresno, for at least two years prior to his appointment; and no scholarship shall be held or shared by one person for more than four years.

No one shall be appointed to a W. J. Dickey scholarship unless he has fulfilled all the requirements for regular standing in the university.

Other things being equal, preference shall be given, in making appointments, to first-year students.

Appointments shall be made for the college year, but may be terminated earlier at the discretion of the committee. Appointments may be renewed at the discretion of the committee for a total period not exceeding four years.

In making its recommendation the faculty committee shall keep in mind that the donor of the W. J. Dickey scholarship fund wished the benefits therefrom to be derived by persons who are financially unable to make their way through college. In addition to this fact, character, scholarship, and seriousness of purpose shall be taken into consideration in determining appointments.

The W. J. Dickey Scholarship Fund provides for two scholarships for the year 1914-15 of \$250 each payable in nine monthly installments beginning September 1, 1914.

Applications for appointment to the W. J. Dickey scholarships, with pertinent evidence and testimonials, shall be made to the president of the university who will refer it to the appropriate committee. Candidates shall be recommended by the committee to the president, who shall submit the names to the trustees of the Dickey estate, and upon their approval appointments shall be made by the president of the university.

Stanford, Trustee Thomas Welton, six thousand pounds sterling, the first installment of a fund for the erection of a suitable building for a picture gallery to house the collection of paintings given by him to the university.

CHEMISTRY

General Bakelite Co., a collection of sample of bakelite manufactures.

EDUCATION

Playter, Miss Charlotte S., a legacy estimated at \$10,000, for the purpose of establishing a fellowship in education for the study of dull and retarded children. The income from the fund being insufficient to meet the salary, estimated at \$1,000 a year, for such a fellowship, the university is to contribute the difference, not to exceed \$500 annually for five years, during which period the control and management of the property is to remain in the hands of the donor. If the property has not been sold at the end of that time, she is to turn over to the university the sum of \$10,000. In the meantime should expected additional gifts not prove adequate to maintain the fellowship, the university has the right to devote the income of the original fund to the promotion of this phase of education in such manner as may best forward the object of the trust. The fellowship is to be known as the Dr. C. Annette Buckel fellowship.

ENTOMOLOGY AND BIONOMICS

Bernard, Mrs. Matilda, widow of the late Henry M. Bernard of the University of Cambridge, England, twenty pounds sterling to maintain a scholarship in entomological research.

GEOLOGY AND MINING.

- Arnold, Ralph, Pasadena, Tertiary fossils from middle California. Recent shells and Tertiary fossils from Venezuela.
- Beeson, Joseph J., Los Angeles, 1 specimen of native copper from Bisbee, Arizona; 1 specimen of iron pyrites crystals from Bingham, Utah.
- Bemis, H. E., Prescott, Arizona, 2 rough diamonds from Pike county, Arkansas.
- Branner, J. C., Stanford University, 1 cut specimen of phenacite from Brazil.
- Clark, George A., Stanford University, pebbles and pumice from St. Paul Island, Alaska.
- Comissão Geologica de S. Paulo, Brazil, fossil *Stereosternum tumidum* from S. Paulo, Brazil; clays in crystalline forms from decomposition of leucite from Poço de Caldas, Brazil.
- Cooper, W. G., miscellaneous rock specimens from Humboldt county, California.
- Crook, Professor W. J., Rapid City, S. Dakota, columbite and mica from South Dakota.
- Derby, O. A., Rio de Janeiro, Brazil, 5 photographs of Brazilian granites.
- Guilherme, Dr. Florence, S. Paulo, Brazil, pebbles of titanite acid from Agua Suja, Minas, Geraes, Brazil, diamond mines; oxide of zircon from Caldas, Rio Verdinho and Rio Verde.

- Fowler, Mrs. Marion H., Palo Alto, 16 cretaceous fossils from Nebraska.
- Gleim, E. M., Shafter, Texas, 1 specimen of horn silver from Shafter, Texas.
- Hess, F. L., U. S. Geological Survey, Washington, D. C., a fine specimen of cassiterite from Kings Mountain, N. C.; specimens of gilsonite from Utah; specimens of carnotite from Yellow Cat creek, Utah; specimens of uranium and vanadium bearing sandstone from San Rafael Swell, 11 miles w. by s. from Green river, Utah; 16 specimens of jarosite from New Mexico; 2 specimens of carnotite from Mauch Chunk, Pa.
- Hook, J. S., Ithaca, N. Y., 19 specimens of phosphate rocks from the State of Tennessee.
- Hoover, H. C. and Turner, H. W., San Francisco, 9 specimens of rocks, minerals and ores from Humboldt county, Nevada.
- Kimball, E. B., San Francisco, Cal., specimens of carnotite from Colorado and Utah.
- Lyne, Henry S., Melbourne, Australia, a set of ores, minerals and rocks from the Bischoff tin mines of Tasmania.
- McMahon, Frank, Castle Creek, Idaho, 30 fresh water fossils from Castle Creek, Idaho.
- Moss, H. R., Sunnyvale, specimen of sphalerite from Mariposa county, California.
- Mosely, Alfred, Union Bank Building, Ely Place, London, 58 diamonds from South Africa, one in the original matrix; tablets for mounting diamonds; 2 specimens of polished crocidolite.
- Park, Hugh, manager of Nipissing Mining Co., an especially valuable set of the typical and rare minerals, ores and rocks of the cobalt mining district; 80 rocks of the Cobalt mining district; 50 minerals and ores from the Nipissing mine, Cobalt mining district, Cobalt, Ontario.
- Prescott, B., miscellaneous specimens from Chahuahua, Mexico, and from Cook's Peak, New Mexico.
- Prout, F. S., magnesite from Sonoma county, California.
- Ray, James C., Stanford University, collection of ores from Butte, Montana.
- Sales, Mr., Anaconda Copper Co., collection of Butte, Montana, ores.
- Sayles, Robert W., Harvard University, specimens of tillite from Massachusetts.
- Smith, Dr. J. P., Stanford University, mesozoic fossils from northern California.
- Stanford class in field geology, collections of fossils from the Tesla quadrangle.
- Steel, Donald, Oroville, diamond from the Belgian Congo, Africa; concentrates from diamond washings of the Belgian Congo.
- Stinson, Mrs. E. N., Palo Alto, about 600 fossil shells of the Pliocene and Pleistocene ages from about the Adriatic Sea; collected and identified by Louis Kossuth.
- Swift, T. B., Martinez, 3 specimens of phosphate rocks from Idaho.
- Tovote, W. L., Globe, Arizona, collection of ores from Globe, Arizona.

- Turner, H. W., Mills building, San Francisco (see also H. C. Hoover), 10 rock specimens from California, Nevada, and Alaska; 24 specimens of vanadium and uranium minerals from Utah; box of ore-bearing rocks from California; books; cinnabar and pyrite in shale, Oceanic mine, San Luis Obispo county; gabbro (?), Oceanic mine; intrusive in supposed miocene sediments; hardened shale, near contact with gabbro (?), Oceanic mine; piece of pyroxenite from Union Copper mines, Copperopolis; separation from the black vanadium-uranium ore containing pyrite and locally known at Paradox Valley, Colorado, as Ketnsmithite; 3 small boxes of samples from Montrose county, Colorado, showing carnotite in recent detritus.
- Turner, T. N., Stanford University, rock specimens from eastern Siberia.
- Wagner, Edward A., San Diego, 3 specimens of molybdenite in granite.
- Waring, G. A., Washington, D. C., 3 specimens of doubly terminated quartz crystals from Brazil.
- Wolfen, H. M., collection of Homestake ores.
- Woodworth, Professor J. B., Harvard University, 9 photographs of geologic subjects.
- Wright and Cobb, Jersey, Cal., fossils; tooth of elephant; horn-pith of bison; piece of bone, dredged near Stockton, California.

HISTORY

- Numano, Hon. Y., consul general of Japan, acting for certain Japanese donors, \$5,000 for the maintenance during three years of the instructorship in Japanese history and government now held by Dr. Ichihashi. It is understood in connection with this renewed gift that the holder of the instructorship shall be given every opportunity to teach on any subject pertinent to Japanese civilization and that his services shall be utilized in any department of the university where he can work to advantage, his activities being not necessarily limited to specializations in history.

UNIVERSITY LIBRARY

- Lathrop, Charles G., \$500, for the purchase of works relating to California, in continuation of his previous gifts to this same end.
- Eckart, William R., 626 volumes and 185 pamphlets relating to mechanical engineering and electricity.
- Branner, John C., 453 volumes and 352 pamphlets and maps relating to Brazil and South America.
- Martin, Percy A., 76 volumes and 16 pamphlets, relating to Brazil.
- Vick, Bernhard, several old and valuable books.
- From various donors, 2008 volumes and 1,647 pamphlets, a list of which appears in the report of the librarian.

LANE LIBRARY

- Brown, Dr. Philip King, San Francisco, Cal., an original letter by Dr. Edward Jenner relating to the doctrine of vaccination.
- Rixford, Dr. Emmett, San Francisco, \$20, to be added to the fund for the Henry Gibbons Junior library of obstetrics and gynecology.
- San Rafael Public Library, trustees of, 329 volumes medical books originally belonging to Dr. DuBois.
- Selfridge, Dr. Grant, San Francisco, 155 volumes of journals and text books relating to diseases of the ear, nose and throat.
-

MEDICAL SCHOOL

- Lathrop, Charles G., Stanford University, a bequest of \$10,000.
- California Society for Exceptional Children, San Francisco, certain apparatus and equipment for the examination of defective children.
- Coffin, Charles A., New York City, \$250, in continuation of his contributions for research in tropical diseases.
- Nielson, Mrs. Kate Felton, San Francisco, \$300, for the free care of patient in the medical ward.
-

MUSEUM.

- Salviati, Dr. A. & Company, Venice, Italy, a second collection of Venetian glass, copies of the 17th and 18th centuries, and a collection of enamel glass in various tints and sizes.
- Beatty, John, Hydaburg, Alaska, a pair of paddles or tribal emblems.
- Miller, G. C. and Franklin, J. C., Palo Alto, early Stanford photographs.

APPENDIX II

DEPARTMENTAL REPORTS

ANATOMY.

During the year 1913-14 the departmental faculty consisted of Arthur William Meyer, professor, Edgar Davidson Congdon, assistant professor, and Ernest Risling, technical assistant.

In addition to the teaching activities tabulated below, investigations on hemal nodes, accessory spleens, prenatal growth and foetal structures were continued by Professor Meyer and several articles published on each. Professor Congdon continued studies on tissue culture, growth, and on histogenesis. Some of the results are being prepared for early publication.

Mr. Marion Reginald King, a medical student, continued the study of the sheath of the atrio-ventricular bundle so well begun by my former associate Dr. Ruskin M. Lhamon; and Mr. George Hashiba, a prospective medical student, diligently began an investigation of the lymphatic system of the guinea pig.

As time and opportunity permit the histological and embryological research collections are being enlarged and some very valuable embryological material has been received during the past year through the courtesy of physicians.

In order to relieve the department from the questionable burden of special courses, our experience during the past years showing that only a few students can do more than complete the required work in the allotted time, before removing to San Francisco, only one elective course was offered this year. This decision, however, in no way prevented any student from undertaking an investigation or from attaining a larger knowledge of anatomy than is required.

During the past year 46 different students and one physician did work in anatomy here at Palo Alto. Eleven of these were women and 36 men. Twenty-six were graduates and 19 undergraduates. Seventeen were not registered as medical students and 29 were so registered, but very few of the non-medical students are not prospective students of medicine.

The total enrollment in anatomy here at Palo Alto during the past five years was 229 students, 15 per cent of whom did not begin or continue the study of medicine. The details of courses and enrollment for 1913-14 appear in the accompanying table.

INSTRUCTOR	COURSE	Unit Hours	Attendance									
			1st Sem.					2d Sem.				
			F.	M.	Med.	Non-Med.	Total	F.	M.	Med.	Non-Med.	Total
Congdon-Meyer..	Systematic anatomy 2, 3, 4	2-5	10	31	30	11	41	10	23	17	16	33
Congdon-Meyer..	Osteology 1.....	1-3	6	16	13	9	22					
Meyer	Topographical anatomy 5.....	1-3	1	3	0	4	4	1	2	3	0	3
Meyer	Conferences	2						10	23	17	16	33
							67					69

ARTHUR WILLIAM MEYER,
Professor of Anatomy.

APPLIED MATHEMATICS

The teaching force of the department during 1913-14 was as follows: Professor Leander Miller Hoskins, Associate Professors Halcott Cadwalader Moreno, Sidney Dean Townley and William Albert Manning, and Assistant Professor Ernest William Ponzer.

The enrollment in the courses given during the year was as follows:

INSTRUCTOR	COURSE	Units		Enrollment	
		1st Sem.	2d Sem.	1st Sem.	2d Sem.
Moreno, Manning, Ponzer	1. First-year mathematics.....	5	5	137	109
Moreno, Ponzer, Manning	2. Calculus	3	3	97	80
Manning, Townley, Hoskins	3. Theoretical mechanics.....	5	5	93	80
Moreno	4. Advanced calculus.....	2		9	
Moreno	8. Engineering mathematics..	2		3	
Moreno	9. Math. theory of heat.....	3	3	2	2
Townley	10. Descriptive astronomy.....				
Townley	11. Practical astronomy.....		3		8
Townley	12. Advanced practical astronomy		1		1
Hoskins	*3a. Hydraulics		5		64
Hoskins	*3b. Hydraulic motors.....	3		19	
				360	344

*Scheduled under Engineering.

LEANDER MILLER HOSKINS,
Professor of Applied Mathematics.

BACTERIOLOGY AND IMMUNITY

The teaching staff of the department for the year 1913-14 consisted of Wilfred H. Manwaring, professor; Harry Johnson Sears, instructor; and Marcus Claude Terry, assistant (voluntary).

The following courses were given:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Sears, Terry	1. General bacteriology.. (non-medical)	5	.....	22
Manwaring, Sears.....	2. Medical bacteriology..	5	23	.....
Manwaring	4. Immunity, lectures.....	2	25	.....
	Immunity, laboratory	3 to 8	.....	10
Manwaring	3. Advanced work	2 to 5	2	2
	Total		50	34

The investigations under way in the department relate to the role of certain fixed tissue cells in anaphylaxis and immunity, with special reference to immunity in tuberculosis.

WILFRED HAMILTON MANWARING,
Professor of Bacteriology and Immunity.

BOTANY

The personnel of the department for the year 1913-14 was as follows: Professors Douglass Houghton Campbell and George James Peirce, Associate Professor LeRoy Abrams, Assistant Professor Leonas Lancelot Burlingame, Instructor James Ira William McMurphy, and Assistant Frank Jason Smiley. Miss Georgia Helen Bentley and Roxana J. Stinchfield acted as herbarium assistants.

The attendance on the courses conducted by the department is indicated in the following table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d. Sem.
Campbell, Peirce, Abrams, Burlingame, Smiley	1. Elementary botany..	3-3½	54	46
Campbell	2. Algae	5	12	
McMurphy	3. Fungi	3	13	
McMurphy	3a. Plant pathology	3		8
Campbell	4. Archegoniatae	5		9
Burlingame	5. Gymnosperms	3	4	
Abrams	6. Angiosperms	3		5
Peirce	7. Physiology	3	5	
Peirce	8. Physiology	3		11
Burlingame	9. Technic	3		4
Abrams	11. Geographical distribution	3	10	
Abrams	12. Field botany	1	13	11
Campbell	13. Advanced archegoniatae	3		2
Abrams	18. Research in taxonomy	8	1	1
	Total		112	97

Professor Campbell has been engaged on the material he brought back from the Malayan region one year ago, and in preparing a paper on *Pallavicinia* for publication in collaboration with a former student and assistant, Miss Williams. Professor Campbell's collections were made in the Malay States, Borneo, Sumatra, Java, and the Philippine Islands, and are especially valuable for the study of morphological problems in the ferns and liverworts.

Professor Peirce has continued his experimental studies of respiration and has found that the age and the germinating power of seeds are indicated by the yield of heat in respiration during the early stages in respiration. He has also carried forward his work on the formative influence of light, and in coöperation with Professors Swain and Mitchell

of the department of chemistry, on the effects of smelter smoke and cement dust on vegetation.

Associate Professor Abrams has continued his studies of the Pacific Coast trees and shrubs. The results of these studies are to be embodied in a descriptive manual now in advanced preparation. Professor Abrams also reports, as curator of the Dudley Herbarium, the addition of 5,896 sheets of specimens during the year, and the acquisition of a new case which increases the capacity of the herbarium to the extent of 15,000 sheets.

Assistant Professor Burlingame has continued his study of the morphology and affinities of the Araucarieae, which was begun in 1910, and will send the final papers to the press during the summer of this year (1914).

In addition to work already mentioned and finished he has had the good fortune to find and collect seed of a lupine which appears to be in the act of producing new and stable varieties in some of the fields in the neighborhood of the campus. This plant appears to afford peculiarly favorable material for the study of the origin of species and it has, therefore, been carefully collected with a view to carrying on a series of carefully controlled breeding experiments.

Mr. McMurphy has gotten together considerable material illustrative of plant diseases and has especially studied the blotch and spot disease of oats and barley, and the twig blight of live oak.

Mr. Smiley has carried on extensive field and herbarium studies of the alpine and sub-alpine vegetation of the Lake Tahoe region.

The events of special interest were the return of Professor Campbell from his tour of the American and oriental tropics, of Mr. McMurphy from a year of study in plant pathology at the University of Wisconsin, and the appointment of Mr. Smiley to the Scholarship maintained by the Harvard Club of San Francisco. This appointment will enable Mr. Smiley to complete his studies in the flora of the Tahoe region by comparing his collection with those at the Gray Herbarium.

GEORGE JAMES PEIRCE,
Professor of Plant Physiology.

CHEMISTRY

The teaching staff for the year 1913-14 consisted of Professors John Maxson Stillman, Lionel Remond Lenox, Edward Curtis Franklin, Stewart Woodford Young, Robert Eckles Swain; Assistant Professor John Pearce Mitchell; Instructors William Henry Sloan, George Shambaugh Bohart; Acting Instructor Alice Ruth Berger.

The attendance in the various courses was:

LECTURE COURSES

INSTRUCTOR	COURSE	Units per Week		Attendance.	
		1st Sem.	2d Sem.	1st Sem.	2d Sem.
Mitchell	*1. General inorganic	2	2	148	121
Mitchell	*1. General inorganic	3	2	57	60
Stillman	*2. Principles	3	3	35	29
Franklin	*3. Organic	2	2	25	18
Swain	†3a. Organic (medical)		3		20
Stillman	*4. Industrial	2	2	12	7
Lenox	†6. Qualitative analysis	1	1	19	24
Franklin	*7. Advanced organic	2	2	15	12
Young	*8. Physical chemistry	3	3	13	13
Young	†10. Applied physical chemistry		2		8
Swain	†11. Physiological chemistry	3		25	
Stillman, Franklin, Swain	*12. Seminary	1	1	12	9
Mitchell	X. Chemical calculations		2		5
				361	326

*Courses continuing through the year.

†Courses complete in one semester.

*LABORATORY COURSES

INSTRUCTORS	COURSE	Units per Week	Attendance	
			1st Sem.	2d Sem.
Mitchell, Bohart and assistants	aI. General inorganic	2	62	.....
Lenox, Berger	aII. General inorganic	2	78	72
Franklin and assistant	b. Qualitative analysis	3	19	24
Sloan	c. Organic preparations	3	6	18
Lenox, Sloan	d. Quantitative analysis	3 to 4	28	11
Young, Van Sicklen	e. Mineral analysis	3 to 4	4	.....
Swain	f. Physical chemistry	3 to 5	2	5
Lenox	g. Physiological chemistry	3	22	.....
Lenox, Sloan, Berger	h. Assaying	3	9	9
Stillman	k. Analytical chemistry (pre-medical)	4	.....	11
Franklin	x. Advanced or special courses or research		1	4
Young	"		4	4
Swain	"		5	6
Sloan	"		4	7
			1	2
			245	173

*All laboratory courses arranged on a one-semester basis.

For the year 1914-15 Instructor Sloan has been promoted to the rank of assistant professor and Acting Instructor Berger to the rank of instructor.

Besides the routine of laboratory and class work, the chemical activities of members of the faculty and the research work of the faculty and advanced students, in progress during the year, are herewith summarized.

Professor Franklin has served upon the following commissions or committees of scientific character: International committee on inorganic nomenclature; U. S. commission on water standards; committee of one hundred on scientific research of American Association for Advancement of Science; jury of award of the Willard Gibbs medal; International committee on annual tables of constants and numerical data of chemistry, physics and technology; commission on the effect of smelter fumes at Selby Smelting Works. Professor Franklin has been engaged during the year also in laboratory investigations upon: representatives of a new class of salts; transference experiments upon solutions of potassium ammonoargentate, etc.; molecular weights determinations in solvents of low boiling points; heavy metal salts of ammono acids.

Professor Young has continued his investigations on the commercial recovery of sulphur from smelter fumes, and has been occupied also with studies of colloid solutions.

Professor Swain has acted on the advisory board of the State Smelter Wastes Commission of California and has been engaged in a study of dust losses and dust recovery systems in cement plants.

Assistant Professor Mitchell has also acted on the advisory board of the State Smelter Wastes Commission and undertaken the direction of the chemical work of the commission. He has also, as a member of the laboratory section of the American Public Health Association, co-operated in the revision of the standard methods of water analysis; has also been engaged in the investigation of the methods available for the determination of dust-fall in the vicinity of cement plants.

Instructor Sloan has studied the electrolytic determination of copper in the presence of small amounts of antimony, arsenic, and silver, and the electrolytic determination of zinc using an air-stirrer in place of a rotating anode. He has also studied the influence of tannic acid on the precipitation of zinc sulphide.

Instructor Bohart, under the supervision of Professor Franklin, completed the investigation of the reactions between potassium amide and certain salts of cadmium, nickel and chromium in liquid ammonia solution, the results of which will appear as his thesis for the degree of Ph. D.

Acting Instructor Berger has been occupied with the development of certain improvements in the separations of the metals copper, cadmium, arsenic, antimony and tin.

The work of advanced students engaged in research is as follows:

Mr. John D. Clark, professor of chemistry in the University of New Mexico, has carried on a chemical study of the enrichment of copper sul-

phide ores, under the direction of Professor Young. The results have been accepted as a thesis for the degree of Ph. D.

Mr. H. J. Sears, instructor in bacteriology, has in progress under direction of Professor Swain, an investigation of the nitrogenous metabolism of certain bacteria grown in pure cultures.

Mr. W. J. Van Sicklen, assistant in physical chemistry, has continued his researches in the mechanical stimulus to crystallization, with co-operation of Professor Young.

Mr. E. M. Hogg, assistant in elementary chemistry, has investigated the corrosion of iron and the passive state, a research directed toward his thesis for the degree of Ph. D. carried out under direction of Professor Young.

Mr. P. G. Albrecht, assistant in physiological chemistry, under direction of Professor Swain, has studied the composition and waste products of certain molluscs, being research toward his thesis for the degree of Ph. D.

Mr. E. R. Harding, under Professor Swain, continued the investigation of hydrolytic agents upon allantoin with reference to its quantitative estimation.

Mr. Z. Ostenberg studied the chemical action of the silent electrical discharge upon certain gases, under supervision of Professor Young.

Mr. D. B. Dill studied chemical constitution of the land mollusc, *Ariolimax californicus*, under direction of Professor Swain.

Mr. J. W. Jones, under direction of Professor Stillman, studied the influence of heat and light upon sugar solutions in the presence of certain metallic hydroxides.

Mr. H. H. Mosher studied under the direction of Professor Swain, the fate of uric acid in the animal organism.

Miss Ruth Seeley, under direction of Professor Swain, studied the chemical composition of the spineless cactus.

Mr. W. I. Weaver, under direction of Professor Franklin, investigated some reactions between ammono-acids and potassium amide in liquid ammonia solution.

Mr. F. S. Pratt has investigated, under direction of Professor Young, the influence of electrolytes on the electrical charge of colloid particles.

Mr. W. Watanabe has carried out researches in the electrical properties of colloid particles under direction of Professor Young.

Mr. George Ziser has carried on an investigation of the action of ammonia on Grignard's reagent, under direction of Professor Franklin.

A notable addition to the equipment of the laboratory is a liquid-air plant now in process of installation. This will facilitate the study of low temperature reactions.

An interesting collection of Bakelite manufactures has been received, the gift of the General Bakelite Co.

JOHN MANSON STILLMAN,
Professor of Chemistry.

CIVIL ENGINEERING

During the past year the department of civil engineering has given the courses listed below. They are in substance the same courses that have been given in former years with one important exception. Owing to Professor Eckart's devoted efforts the elementary hydraulic laboratory was so far completed by the beginning of the second semester, that course 36 in elementary hydraulic laboratory could be given. This is the beginning of work which will materially strengthen the course in hydraulics. As usual the departments of chemistry and bacteriology have kindly given special courses of lectures for the students in water supply engineering, and the department of civil engineering fully appreciates the help extended. While no special effort is being made to attract graduate students until we are prepared to offer better inducements for carrying on advanced work, three of our former graduates were with us last year, and did creditable work for the engineer's degree.

At present the department is fitting out the mechanics of materials laboratory, availing itself of the information gathered during the summer by Mr. Moser in an inspection trip to the laboratories of the leading eastern institutions. Plans for a meter rating station to round out the hydraulic equipment will also be made during the year.

The accompanying table gives the statistics of courses and attendance:

INSTRUCTOR	COURSE	No. Hours Credit	Number of Students	
			1st Hour	2d Hour
Foss & assistants..	1a	1	83	24
Foss & assistants..	1b	1-4	92	68
Fish & assistants..	4a	5	43	1
Fish & assistants..	4b	2	14	....
Fish	6a	5	....	31
Fish	6b	2	....	2
Fish	6c	2	....	5
Fish	6d	2	12	....
Wing & Moser.....	2	5	67	....
Hoskins	3a	5	....	58
Hoskins	3b	3	....	16
Eckart & Moser....	3b	2	....	37
Moser	8a	3	34	....
Moser	8b	5	....	28
Moser	8c	2	....	3
Wing	9	5	37	28
Marx	12	5	38	....
Marx	13	5	....	34
Marx	Special Sanitary	0	26	....
Marx	16	2	4	....
Marx	15	2	3	....
Marx	Special graduate work	5-10	4	3
			457	338

ECONOMICS

The instruction in the department was given during the year 1913-14 by Murray Shipley Wildman and Albert Conser Whitaker, professors; Donald Frederick Grass, Stephen Ivan Miller, Jr., and Victor J. West, assistant professors; Paul Wander, instructor; William Edward Cox, acting instructor; George Archibald Clark, lecturer; J. Anton de Haas, Mabel Newcomer, Frank M. Russell, assistants.

The death of Professor Burt Estes Howard, in June 1913, led to the appointment of Assistant Professor West, who gave the courses in government and politics. The absence on leave of Assistant Professor Cross resulted in the temporary appointment of Paul Wander for the courses in labor and sociology.

At the beginning of the year Professor Whitaker returned to Stanford from the University of Chicago, where he had given instruction for a year and a half.

Near the close of the academic year Assistant Professor Cross resigned to accept a similar position in the University of California, Assistant Professor Miller was granted leave of absence for a year's study at Harvard University. Messrs. Cox, de Haas and Wander were re-appointed instructors for 1914-15. Mr. Yamato Ichihashi was appointed lecturer with leave of absence for the first semester. Mr. Frederick B. Garver, of University of Chicago, was added to the staff for the next year.

The number of major students registered in economics during 1913-14 was 211, of whom eleven were in graduate work. The doctor's degree was conferred on Mr. Donald F. Grass and the master's degree on Miss Mabel Newcomer.

The list of courses given, with the enrollment in each, appears in the accompanying table:

LECTURER	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Wildman	1. Elements	3-3	327	298
Wildman	1a. Elements	5	.....	59
Grass	2. Accounting	3	80	.....
de Hass	3. Resources and trade	3	79	.....
Wildman	4. Money and banking	4	42	.....
Miller	5. Railway transportation	3	.....	136
Cox	6. Introduction to statistics	3	.....	21
Cox	7. Economic history	3	14	.....
West	8. General political science	2	25	.....
Whitaker	10. Corporation finance	4	24	.....
Miller	11. Public finance	3	96	.....
Wander	12. Labor problems	3	27	.....
Wander	13. Charities	3	77	.....
Wander	14. Corrections	3	.....	103
Miller	15. Financial history	2	.....	43
Whitaker	16. Foreign exchange	2	.....	11
Grass	17. Insurance	2	.....	56
Miller	20. Taxation	3	20	.....
Wildman	21. Investments	2	.....	12
Wander	22. Seminar in labor	2	.....	5
Grass	23. Business administration	3	.....	49
Clark	24. Secretarial training	3	.....	29
Whitaker	25. Value and distribution	4	9	.....
Grass	26. History of political economy	2-2	12	10
Wildman	27. Graduate seminar	2-2	6	7
Whitaker	28. Combinations and trusts	2	.....	7
Wander	29. Socialism	3	.....	34
West	31. American politics	3	12	.....
West	32. Municipal government	3	17	.....
West	33. Parliamentary government	3	.....	12
West	34. Seminar in political science	2	.....	7
West	35. Political parties	3	.....	18
			867	917

MURRAY SHIPLEY WILDMAN,
Professor of Economics.

EDUCATION

The members of the department for 1913-14 were Ellwood P. Cubberley, professor; Percy E. Davidson, Rufus C. Bentley, and Lewis M. Terman, associate professors; Jesse B. Sears, assistant professor; Mr. Elmer E. Dailey, Mr. George A. Clark, and Dr. Ernest B. Hoag, lecturers.

The following is the record of attendance in the several courses offered by the department during the year:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Cubberley	1. Public education in America.....	2	169	.....
Davidson	2. Theory of education.....	2	.....	107
Sears	3. History of education in Europe.....	3	20	25
Sears	6. Elementary education	2	22	20
Davidson	8. Logic of education	3	.....	29
Cubberley	9. City school administration	3	17	16
Cubberley	10. State school administration	2	26	26
Terman	11. Physical aspect of the child	3	64	.....
Terman	12. Educational hygiene	3	.....	61
Bentley	13. Secondary education	3	32	73
Terman	14. Adolescence	2	29	20
Bentley	15. Administration of a high school.....	2	12	.....
Bentley	16. Types of secondary schools	2	.....	11
Sears	17. Methods and management	1	54	24
Sears	18. Practice teaching	4	24	21
Cubberley	19. Sources for the history of education..	2	4	4
Sears	20. Criticism and supervision of instruc- tion	3	4	2
Cubberley	20. Criticism and supervision of instruc- tion	1	.....	1
Terman	25. Experimental pedagogy	2	20	.....
Terman	26a. Pedagogical tests	2	.....	6
Davidson	26b. Pedagogical practice	2	.....	6
Bentley	28. Foreign school systems	2	7	5
Sears	31. Thesis	1	.....	5
Cubberley	31. Thesis work	2	1	1
Cubberley	32. Special	3-5	7	6
Terman	32. Special	2-5	8	.....
Clark	33. Commercial teachers' training course..	2	.....	11
Cubberley	34. Educational problems	1	.....	17
			520	497

The inclusion of the graphic art department as a sub-division in the department of education has brought about the coördination of the two lines of work in such a way as to promote excellent training for prospective teachers of art work in the schools.

The department has been further strengthened in the past year by the gift of a sum of money by the executrix of the estate of Dr. C. Annette Buckel, which, supplemented by an equal sum set apart by the Board of Trustees of the university, has made possible the establishment of a \$1,000 fellowship for the promotion of much needed psychological and pedagogical research with backward children.

Attention is respectfully called to the "commercial teachers' training course" offered by Mr. G. A. Clark, and to the need of coördinating with it related courses in other departments in such a way as to improve our facilities for the training of high school teachers of commercial branches.

ELLWOOD PATTERSON CUBBERLEY,
Professor of Education.

ELECTRICAL ENGINEERING

The staff of instruction in the department was made up as follows: Professor Harris Joseph Ryan, Assistant Professor James Cameron Clark and Instructor John Williams Davis.

The courses of instruction given and the corresponding attendance are tabulated below:

INSTRUCTOR	COURSE	Units	Kind of Work	Attendance	
				1st Sem.	2d Sem.
Ryan	3a. Practice	4	Lectures	21	....
Ryan	3a. Practice	2	Lectures	....	16
Ryan	3c. Design	4	Class	....	16
Ryan	10. Adv. work	4 and 6	.....	2	1
Clark, Davis	3b. Machinery	4	Laboratory	19	....
Clark	1. Elements	4	Lectures and Lab. Demon.	....	40
Clark	2b. Energy (M. E.)	2	Laboratory	....	10
Davis	2a. Energy (M. E.)	4	Class	....	21
Davis	2b. Energy (E. E.)	4	Laboratory	....	20
				42	124

Total of 626 student-units of instruction.

During the year the department has gone forward with the reorganization of its courses of instruction as presented in the 1913-14 report. The authorities of the university provided for the use of the department a suitable building with ample enclosed land adjacent thereto in which to establish a high voltage laboratory. Considerable progress was made in the provision of equipment for this laboratory. The installation of such equipment will be completed and its uses begun during the ensuing year and will be referred to in the 1914-15 report.

A notable advance was made in the establishment of the engineering assemblies through the coöperation of the engineering faculties and students. Before these assemblies a series of valuable lectures were delivered by distinguished engineers drawn from the various lines of practice. The following were from electrical engineering:

The electrification of the Tehachapi Railway by Allen H. Babcock, consulting electrical engineer, Southern Pacific Co.

Electrical railways by A. V. Thompson, special sales agent, railway department, General Electric Co.

The department appreciates heartily the coöperation rendered by these gentlemen.

HARRIS JOSEPH RYAN,
Professor of Electrical Engineering.

ENGLISH LITERATURE AND RHETORIC

The faculty for the year 1913-14 consisted of: William Herbert Carruth, Alphonso Gerald Newcomer (died Sept. 16), professors: Lee Emerson Bassett, associate professor; Samuel Swayze Seward, Jr., Howard Judson Hall, Henry David Gray, Everett Wallace Smith, assistant professors; Theresa Peet Russell, Edith Ronald Mirrielees, Carl S. Downes. Frank Ernest Hill, Elizabeth L. Buckingham, instructors; R. Justin Miller, Russell O. Stidston, J. Maxwell Anderson, acting instructors; and the following student assistants: Margery Bailey, Walter S. Clute, Dorothy P. Gunnell, Arnie McPherron.

Assistant Professor Briggs and Instructor Van Wyck Brooks were absent during the year on leave. The death of Professor Newcomer just at the opening of the first semester made necessary the shifting of several courses, the instructors who took up his work being relieved in part by student assistants.

The number of major students in the department was 140, of whom 26 were graduates; 25 students received the degree of A. B., 9 the degree of A. M., and 1 the degree of Ph. D.

The record of the various courses actually given with attendance here follows:

INSTRUCTORS	COURSE	Units	Attendance	
			1st Sem.	2d Sem.
Mirrielees and 3 graduate student assistants	A. Elementary composition (4 sec)	1	78	66
Buckingham	1. Vocal expression (3 sec)	2	78	80
Hall, Russell, Downes, Hill.....	2. Composition (8 sec)	2	232	201
Mirrielees, Downes	5. Eng. classics (2 sec)	3	55	96
Seward	6. Outline Eng. literature	2	23	.....
Seward	7. Types of poetry	3	.....	19
Hall	8. Technical writing	1-2	6	9
Bassett	9. Extemp. speaking (2 sec)	2	74	.....
Bassett	11a, 11b. Vocal interpretat'n (2 sec)	2	31	24
Russell	12. Advanced composition	2	32	23
Russell	14. Browning	3	33	.....
Gray, Bassett.....	15. Shakespeare	3	71	62
Russell	16. English Bible	3	.....	54
Seward	19. Eng. lit. early 19 cent.	3	13	16
Bassett, Miller.....	21. Public speaking (4 sec)	2	.....	78
Bassett	22. Oral debate	2	14	14
Seward	24. Argumentation	2	10	10
Mirrielees	25. Short story	2-3	21	24
Gray	26. Play construction	2	8	6
Carruth	28. American literature	3	11	.....
Carruth	29. Great epics	3	.....	33
Carruth	30. Verse writing	2	.....	17
Gray	31. Elizabethan drama	3	.....	15
Hall	32. Restoration and 18 cent.	3	23	32
Hall	34. Wordsworth	2	33	.....
Carruth	35. Introduc. to comparat. lit.	2	11	.....
Gray	36. Modern drama	3	36	.....
Gray	39. Modern novel	3	.....	25
Hall	40. Romantic revival	2	.....	3
Seward	42. Teachers' course	2	18	16
Carruth	43. Tennyson seminary	3	16	.....
Carruth	44. Hildebrand seminary	2	.....	8
Gray	45. Shakespeare	2	.....	14
			927	945

Professor Carruth presented before the Pacific Coast Branch of the American Philological Association a paper on Bryant's poem "A Pre-sentiment," and before the American Modern Language Association a paper on "The Pronouns of Address in Goethe's Faust." In May he delivered the commencement address at the Pacific Coast School for the Unitarian Ministry; in June the oration at the unveiling of the Goethe monument in Lincoln Park, Chicago.

Professor Bassett has given forty-seven lectures and recitals before teachers' institutes and various clubs. Professor Gray is chairman of a conference committee striving to secure coöperation between the Pacific branch of the American Philological Association and the American Modern

Language Association; before the former body he read a paper on "The Authorship of Titus Andronicus"; he had a paper on "The First Quarto Hamlet" in the *Modern Language Review*, and is pursuing investigations on the sonnets of Shakespeare. Professor Seward read a paper on "Humor" before the Pacific branch of the A. P. A.. Professor Hall assisted in editing the posthumous volume of Professor Newcomer's Poems, and is engaged in completing certain literary undertakings of Professor Newcomer.

Miss Fanny Caroline Moore, in her investigation on "Stevenson's First Visit to America," discovered the hitherto unknown contributions of Robert Louis Stevenson to the *Monterey American*.

WILLIAM HERBERT CARRUTH,
Professor of Comparative Literature.

ENGLISH PHILOLOGY

During the academic year 1913-14, Mr. S. S. Seward, Jr., of the department of English literature conducted the elementary course in Anglo-Saxon. The other courses were mainly devoted to graduate work and centered in the lectures on the history of English philology in which the problems of this branch of German philology were developed historically. Advanced work was done in the history of the use of the Early English pronouns, and its first fruit was the doctoral dissertation of Mr. Arthur G. Kennedy on "The pronoun of address in the Middle English literature of the thirteenth century."

The following is a list of the courses given and the attendance of students:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Seward	1. Anglo-Saxon	3	30	15
Flügel	3. Early literature	3	66	.....
Flügel	4. Middle English grammar	2	8	.....
Flügel	5. Beowulf	2	.....	10
Flügel	7. Middle English	2	.....	4
Flügel	8. Advanced Chaucer	2-3	.....	25
Flügel	9. Ballads	2-3	18	.....
Flügel	10. History of English philology	2	8	6
			130	60

EWALD FLÜGEL,
Professor of English Philology.

ENTOMOLOGY AND BIONOMICS

The faculty in the department in 1913-1914 was composed of Vernon Lyman Kellogg, professor; Rennie Wilbur Doane, assistant professor of economic entomology; and Eral Jackson Newcomer, acting instructor. Assistant Professor McCracken spent the year on leave of absence in Europe.

The courses given were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Newcomer....	1. Elementary entomology	3	15	35
Newcomer....	2. Morphol. and phys. of insects.....	3	6	8
Newcomer....	3. Classif. and devel. of insects.....	4	9	2
Doane	4. Econ. entomology—Coccidae	3	3	.....
Doane	5. Econ. entomology—Forest insects.....	3	5	.....
Doane	6. Econ. entomology—Orchard and garden insects	3	.....	7
Doane	7. Adv. econ. ent. lab. and field.....	2-4	1	5
Doane	8. Insects and disease.....	2	.....	35
Kellogg	10. Adv. lab. and thesis.....	3-5	4	7
Kellogg	11. Organic evolution	2	.....	85
			43	184

During the year Professor Kellogg continued his studies of the ectoparasites of birds and mammals, and began an experimental study of the comparative influence of environment and heredity in the development of the harlequin cabbage bug. In the summer of 1914 he gave courses on evolution and heredity in the Summer Session of the University of California. Professor Doane, with several students, assisted in the anti-mosquito campaign of San Mateo, and spent the summer of 1914 in field studies, in California and Utah, of insect injuries in regions of smelter smoke. Instructor Newcomer, as Bernard research scholar, studied the histology of the insect ventricular epithelium.

Among student studies may especially be noted the work of graduate student Clarence Kennedy, on the biology and taxonomy of dragon-flies, and of graduate student A. D. Borden, on the structure of the mouthparts of thrips.

The principal additions to the collections were the material collected by Assistant Professor Doane in Samoa in the summer of 1913, and about 200 vials of specimens of ectoparasites from California mammals, collected by Assistant G. F. Ferris as a member of an expedition from the museum of vertebrate zoology of the University of California.

VERNON LYMAN KELLOGG.

Professor of Entomology and Lecturer in Bionomics.

GEOLOGY AND MINING

The department faculty for the year 1913-14 consisted of Professors John Casper Branner and James Perrin Smith; Associate Professors Austin Flint Rogers, David Morrill Folsom, Cyrus Fisher Tolman Jr., and Galen Howell Clevenger; Instructor Hayes Wilson Young; Assistant Waldamer Fenn Dietrich, and Herbert Stone, curator in geology.

The accompanying table gives the course offered and the attendance:

INSTRUCTOR	No.	COURSE	Unit Hours	Attendance	
				1st Sem.	2d Sem.
GEOLOGY					
Branner	1.	Elementary geology	3	225	.....
Branner	1a.	Physiography	1	.....	51
Tolman	1b.	Field excursions	2	25	.....
Branner, Tolman..	2.	Economic geology	2	.....	75
Tolman	2a.	Ore deposits	1	.....	15
Tolman, Beckwith	3.	Topographic geology	4	(x) 14	.....
Tolman, Beckwith	4.	Field geology	5	(x) 17	.....
Waring	5.	Mineralogy	3	27	25
Rogers, Cooper....	5a.	Mineralogy	1	.....	10
Rogers, Cooper....	6.	Petrography	2	19	18
Rogers	7.	Elementary paleontology..	4	16	24
Smith	8.	Research in paleontology	2-5	8	11
Smith		and stratigraphy			
Rogers	9a.	Advanced mineralogy.....	3	6	1
Smith	10.	Paleontology	2	7	8
Branner, Tolman..	11.	Special courses	2	6	6
Tolman	11a.	Advanced ore deposits.....	3	.....	6
MINING AND METALLURGY					
Folsom, Dietrich....	1.	Mining methods	5	18	.....
Folsom, Clevenger	2.	Ore dressing	2	.....	15
Folsom	3.	Summer field work	4	(x) 3	.....
Folsom	4.	Mining machinery	3	.....	13
Folsom	5.	Advanced ore dressing....	2	3	.....
Folsom	6.	Mine engineering	2	.....	3
Folsom, Dietrich....	7.	Thesis	2-5	8	6
Clevenger, Young..	8.	General metallurgy	4	.....	20
Clevenger	9.	Metallurgy of constructive materials	2	85	.....
Clevenger	10.	Metallurgy of gold and silver	2	13	.....
Young	a.	General metallurgy, lab....	2	.....	3
Young	b.	Metallurgy of gold and silver, lab.....	3-5	5	5
Clevenger	d.	Metallurgical research, lab	2-4	3	2
				508	317

(x) Work done during summer vacation.

New equipment added during the year includes apparatus for the investigation of opaque ores with the reflecting microscope.

The following notes call attention to the special activities of instructors and advanced students in the department:

In addition to his routine duties Mr. Smith was engaged in the study of the Triassic faunas of California. Under his direction Mr. C. A. Waring continued his studies and completed a paper on the Cretaceous and Tertiary paleontology of California. Mr. Hannibal with the help of Dr. Ralph Arnold continued his studies of the Tertiary of the west coast. Mr. E. B. Hall has been working in the paleontology of the Tesla and Pleasanton quadrangles. Mr. Ambrose has been studying the Miocene of California especially the Vaqueros formation.

Mr. Rogers made a study of the copper sulphide ores of the Engels mine in Plumas county, California; he has found that the primary ores are of magmatic origin, and that the sulphides have been modified by ascending alkaline solutions. These and similar observations on the copper ores of Butte, Montana, have enabled him to announce the theory of upward secondary enrichment. He has also found the chalcocite replacements of lignite from the red beds of Mexico to be the result of secondary enrichment, and not of primary deposition as was generally supposed.

In conjunction with Mr. A. S. Eakle, of the University of California, Mr. Rogers has described a new mineral of the apatite group, wilkeite, from Crestmore, California. He has also made a chemical study of phosphate rocks and the calcium carbonato-phosphate materials, and has investigated the occurrence of anhydrite in the United States. Under his direction Mr. W. G. Cooper has made a microscopic study of gangue minerals.

Mr. Folsom spent the vacation of 1913 in studying the effects of weathering on coals, and the vacation of 1914 in supervising the construction of a relief map of San Mateo county.

Mr. Tolman completed a report on the geology of the Tucson quadrangle for a folio of the United States geological survey. Under his direction Mr. James C. Ray made a field examination and a microscopic study of the copper-zinc-silver ores of Butte, Montana. In conjunction with Mr. J. D. Clark an investigation was made of the dispersion of colloidal copper sulphides and a paper has been prepared on the subject.

Mr. Clevenger spent his vacation in the study of metallurgical practice in Montana and Colorado. With the help of Mr. K. Pyle he has collected for publication, data relating to electrolytic precipitation on a commercial scale. With the help of Mr. H. W. Young and Mr. T. N. Turner he revised the tables for use in treating slimes by the cyanide process.

Mr. Branner has devoted himself during the year to the duties of the president of the University, the professorship in geology remaining unfilled, but under his oversight.

JOHN CASPER BRANNER,
Professor of Geology.

GERMAN

The department faculty during the academic year 1913-14 consisted of George Hempl and James Owen Griffin, professors; Karl Gustav Rendtorff, William Alpha Cooper, and Macy Millmore Skinner, associate professor; Bruno Boezinger and Hermann Johann Hilmer, assistant professors; and Netta Haffner Hilmer, teaching assistant. Professor Hilmer was on sabbatical leave pursuing advanced studies in Europe, and his place was filled by Dr. Freidrich Alexander Wyneken.

The following is a tabulated statement of the courses given during the year and the number of students enrolled in each course:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Cooper, Skinner, Wyneken..	1. Elementary	5	101	101
Hempl, Griffin, N. Hilmer, Skinner, Wyneken..	2a. Second year reading.....	3	109	101
Boezinger.....	2aa. Scientific reading	3	60	48
Griffin, Boezinger.	2b. Second year composition.....	2	37	33
Griffin, Rendtorff.	3. Classical drama	3	23	20
Griffin	4. Modern drama	2-3	27	26
Skinner	5. Modern novel	2-3	47	43
Hempl	6. Advanced grammar	2	10	11
Cooper	6b. Advanced syntax	2	5	4
Boezinger, Wyneken..	7. Composition	2	20	22
Boezinger	8. Advanced composition	2	11	13
Skinner	10. Schiller	2-3	13	18
Cooper	11. Goethe	3	15	.....
Cooper	11b. Faust	3	.....	14
Rendtorff	13. History of literature	2	19	14
Hempl	14. Teaching of modern language	2	9	.....
Hempl	15. Genesis of grammar	2	.....	5
Rendtorff	16. Middle high German.....	2	6	6
Boezinger	17. Old high German	2	1	1
Rendtorff	21a. History of German civilization.....	2	8	8
Griffin, Rendtorff, Skinner, Cooper.....	23. Thesis work	Var.	3	5
			524	493

There were fifty-eight major students enrolled in the department during the year, of whom seven were graduate students, and fifty-one under-

graduates. Twenty-two of the students received the degree of bachelor of arts and two, Otto Koeb and Norbert Scheele, the advanced degree of master of arts.

JAMES OWEN GRIFFIN,
Professor of German.

GRAPHIC ART

The personnel of the department faculty was as follows: Arthur Bridgman Clark, associate professor; Henry Varnum Poor, assistant professor; Stella Belle Sankey, instructor.

Mrs. Chloe Lesley Starks has spent the year on sabbatical leave in Europe.

An exhibition of oil paintings sent out by the National Art Association was presented to the University public under the auspices of the Stanford Art Club.

The courses of instruction and attendance for the year have been as follows:

INSTRUCTOR	COURSE	Hours	Attendance	
			1st Sem.	2d Sem.
Sankey	1. Elementary	2 to 4	31	37
Poor	2 and 3. Head	2 to 4	14	19
Poor	4. Color in oil	2 to 4	8	18
Clark	5. Landscape	3	9	.....
Clark	6. Lectures	2	40	71
Clark	7. Organic form	3	.....	16
Clark	11. Design	3	17	5
Clark	13. Handicraft	2	12	26
			131	192

ARTHUR BRIDGMAN CLARK,
Associate Professor of Graphic Art.

GREEK

In the absence of Professor A. T. Murray, on sabbatical leave, the department faculty for the year (1913-14) was composed of E. Whitney Martin, associate professor; Mabel E. Brekke, instructor; John D. Cooke, Eleanore M. Wyman, assistants. Two courses also were given by Dr. H. Rushton Fairclough, professor of Latin.

The following is a tabular arrangement of the work given with the enrollment in each class:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Fairclough ..	11. Greek tragedy	3	5	5
Fairclough ..	22. Sculpture	2	22	.....
Martin	4. Prose composition	2	2	.....
Martin	6. Greek literature	3	.....	20
Martin	7. Modern Greek	2	.....	3
Martin	12. New Testament	2	.....	2
Martin	14. Introductory (1st division)	4	.....	6
Martin	14. Introductory (2d division)	5	.....	5
Martin	16. Greek history	3	25	.....
Martin	18. Seminar	2	5	5
Martin	19. Euripides	2	4	4
Brekke	4. Prose composition	2	.....	2
Brekke	5. Homer	3	3	.....
Brekke	13. Rapid reading	1-3	2	2
Wyman	13. Rapid reading;	1-3	2	2
Cooke	1. Elementary	5	1	2
			71	58

E. WHITNEY MARTIN,
Associate Professor of Greek.

HISTORY

The faculty of the department for the year 1913-1914 consisted of Professors Ephraim Douglass Adams, Arley Barthlow Show and Edward Benjamin Krehbiel; Associate Professors Payson Jackson Treat and Henry Lewin Cannon; Assistant Professors Edgar Eugene Robinson and Percy Alvin Martin; Instructors Yamato Ichihashi and Mary Wilhelmine Williams, and Lecturer Allen Marshall Kline, professor of history, College of the Pacific, San Jose.

The graduate assistants were: Frank Elliott Barrow, Clayton Douglass Carus, John Gaylord Howes, Francis Marion Russell, Hettie Alice Withey.

Mr. Adams was granted leave during the second semester in order to collaborate in the preparation of a life of Charles Francis Adams, American minister to Great Britain, 1861-66. During Mr. Adams' absence the executive work of the department was carried by Mr. Krehbiel, and his courses were conducted by Miss Williams and Mr. Kline.

Mr. Krehbiel gave courses in the summer school of Columbia University. Mr. Martin spent the summer of 1913 in travel and study in Brazil at the invitation of the Brazilian government.

Mr. Martin has completed the preparation for the press of the lectures on "The Evolution of Brazil compared with that of Spanish and

Anglo-Saxon America," delivered at Stanford University in 1912 by Dr. Manoel de Oliveira Lima of Brazil. They were issued in June, 1914.

In May, 1913, a group of Japanese gentlemen offered the university a sum of money for the establishment of a lectureship on the history and government of Japan. Mr. Yamato Ichihashi, A. B. Stanford, 1907, A. M. 1908, was appointed as an instructor in the history department for one year. In 1914, a fund sufficient to support this work for three years was offered by the same gentlemen, and Mr. Ichihashi's appointment was renewed. During the year he conducted two courses on the history of Japan.

In March the departmental reading room was opened to students. Books of which there were several copies in the general library and which are used in the general courses in history have been placed in the reading room, 205 volumes in all. The departmental assistants were in charge of the library and report little difficulty with problems of administration. The seating capacity of the room is 48; the average use of the room was: forenoons, 12 students; afternoons, 16 students. The use of the library was especially heavy just before mid-semester examinations.

Connected with the departmental reading room, but in its own quarter, is the Branner Brazilian library, containing the collection of Braziliana, approximating one thousand titles, presented to the university by President Branner. The room is equipped for twelve students and has been used solely for advanced study in Latin-American history.

The number of major students registered in the department for the year was 144, of whom 126 were undergraduates, seventeen graduates, and one special.

The degree of doctor of philosophy was conferred in January, 1914, on Mary Wilhelmine Williams, the title of whose thesis was "Anglo-American Isthmian Diplomacy, 1815-1914."

The master of arts degree was conferred in May, 1914, upon three students: Frank Elliott Barrow: Thesis: "The British Constitutional Crisis of 1910"; Mary Louise Herron: Thesis: "The African Slave Trade, 1815-1830"; Hettie Alice Withey: Thesis: "A Translation of the 'Dialogue of the Exchequer', with explanatory and critical historical notes."

The following is a list of courses given in 1913-14:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Martin	1. Training	1	18	18
Show	3a. Middle ages	3	50	.....
Show	3b. Middle ages	3	.....	58
Cannon	4a. English history	3	68	.....
Cannon	4b. English history	3	.....	104
Krehbiel	5a. European history	2	76	.....
Krehbiel	5b. European history	2	.....	80
Robinson	6a. American colonial history	2	166	.....
Robinson	6b. American colonial history	2	.....	118
Adams	7a. United States history	2	102	.....
Kline	7b. United States history	2	.....	82
Ichihashi	8. Japanese history	3	12	29
Treat	9. The far east	3	56	89
Martin	10. History of Latin America	2	44	62
Cannon	11a. English constitutional history	2	23	17
Cannon	11b. English narrative history	4	.....	12
Martin	12. History of Germany	3	7	9
Show	13a. Ancient church	2	3	.....
Krehbiel	15b. Europe in the nineteenth century	3	30	.....
Show	16. Teachers' course	2	28	24
Robinson	17a. The westward movement	3	44	51
Adams	18a. American and English relations during the Civil War	3	8	.....
Williams	18b. American and English relations, 1815-1860	3	.....	9
Martin	19a. History of Mexico and California	2	18	.....
Martin	19b. History of Brazil	2	.....	12
Krehbiel	20. International conciliation	2	.....	36
Treat	21. Tropical colonization in the far east	2	9	.....
Treat	23. Governments of the far east	2	.....	10
Ichihashi	26. Japanese institutions	2	3	2
Robinson	28. Seminary in the history of the west	2	11	9
Cannon	29. Seminary in English history	2	9	9
Adams	31. American diplomatic history since 1815	2	8	5
Krehbiel	32. Political parties in England, France and Germany	2	16	22
Adams, Williams	35. Seminary in American-European relations in nineteenth century	2	1	1
Treat	36. American diplomacy in the far east	2	10	9
	Thesis	Var.	3	.....
			823	777

EPHRAIM DOUGLASS ADAMS,
Professor of History.

LATIN

In 1913-14 the department faculty consisted of: H. Rushton Fairclough, professor; Jefferson Elmore and B. O. Foster, associate professors. Associate Professor E. W. Martin, of the Greek department, coöperated in the work of instruction, while Professor Fairclough gave courses, in Greek. Professor Hempl, of the German department, gave a course of lectures on Etruscan. The department assistants for the year were Jerome Willis McNair (who gave a course on Virgil and Cicero), William Chislett, Jr., and Mollie Margaret Howe (second semester).

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Elmore	1a. Introductory (direct method)	3	10	10
McNair	1. Virgil and Cicero	3	7	6
Foster.....	2. Terence, Cicero and Horace.....	3	5	5
Elmore	2. Terence, Cicero and Horace.....	3	3	5
Elmore	4. Prose composition I.....	2	3	6
Martin	5. Horace, satires and epistles	3	5	.....
Martin	6. Livy and Tacitus	3	.....	9
Foster	7. Prose composition II.....	2	2	.....
Fairclough ..	8. Roman comedy	3	6	.....
Foster	9. Cicero's letters	2	.....	7
Foster	12. Lucretius	3	.....	4
Foster	13. Conversation	1	.....	6
Elmore	14. Juvenal and martial	2	9	.....
Elmore	17. Teachers' course	2	9	.....
Fairclough ..	22. Seminary in Plautus and Terence.....	2-6	12	11
Fairclough ..	23. Rapid reading	2	10	11
Foster	24. Petronius and Apuleius	3	3	.....
Foster	25. Palaeography	1	7	.....
Hempl	28. Etruscan	2	.....	5
Elmore	29. Roman history	3	.....	54
Fairclough ..	31. Roman art and archaeology	2	.....	49
Foster	33. Latin literature	2	15	.....
Fairclough ..	Thesis work	5	.....	6
			106	194

HENRY RUSHTON FAIRCLOUGH,
Professor of Latin.

LAW

The faculty of the law school for the year 1913-14 consisted of Professors Frederic Campbell Woodward, Arthur Martin Cathcart, Wesley Newcomb Hohfeld, Charles Andrews Huston, Joseph Walter Bingham and Emlin McClain, and Assistant Professor Marion Rice Kirkwood.

Professor Woodward was absent on sabbatical leave during the first semester, and Professor Bingham during the second semester. The course in California practice was given, as usual, by Samuel Watson Charles, Esquire, of Palo Alto.

The courses of instruction given and the enrollment in each were as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Kirkwood	1. Introductory	2	.....	88
Woodward	2. Contracts	5	.....	75
Cathcart	3. Torts	5	70	.....
McClain	4. Criminal law	4	35	.....
Kirkwood	5. Introduction to property	4	62	.....
Huston	6. Agency	4	.....	61
Hohfeld	7. Equity I.....	4	.....	61
Cathcart	8. Constitutional law	4	.....	21
Huston	10. Municipal corporations	3	.....	20
Hohfeld	11. Conflict of laws	4	25	.....
Bingham	16. Wills and administration	3	38	.....
Bingham	17. Future interests	4	9	.....
McClain	20. Persons	3	.....	28
McClain	23. Bailments and carriers.....	3	.....	16
Kirkwood	25. Bills and notes	4	.....	33
Huston	26. Partnership	3	24	.....
Huston	27. Private corporations	4	20	.....
Woodward	30. Mortgages	2	.....	26
Kirkwood	32. Equity III.....	2	11	.....
McClain	33. Damages	2	36	.....
Cathcart	35. Common law pleading	2	38	.....
Cathcart	36. Code pleading	3	.....	19
Hohfeld	37. Evidence	3-3	21	20
Charles	38. California practice	2-2	21	19
McClain	39. Moot court	1 or 2	24	26
			434	513

The registration of students in the law school was 158, of whom 39 were graduate students, 109 undergraduate students, and 10 unclassified. The registration of students in the pre-legal curriculum, excluding those counted as students in the law school, was 170. The total registration, including both law and pre-legal students, was 328, an increase of 30 over the registration of the previous year. In view of the fact that the tuition fee in professional courses was raised to \$100 per year, this increase in registration seems remarkable.

The total number of volumes in the law library on August 1, 1913, was 16,394. During the year 1,811 volumes were added. Of these, 1,180 were acquired by purchase, 50 by gift, and 581 by binding. The total number of bound volumes in the library on July 31, 1914, was 18,305.

Attention is respectfully called to the fact that both the lecture rooms and the library space of the law department are now filled to their capacity. The need of larger quarters will soon become imperative.

At the close of the year Professor McClain resigned in order to accept a professorship in the law school of the University of Iowa, where he has since been appointed dean, and Professor Hohfeld was granted leave of absence for the academic year of 1914-15. To take their places for the year 1914-15, Acting Professor John Begg Cheadle and Assistant Professor Hector Galloway Spaulding were appointed.

FREDERIC CAMPBELL WOODWARD,
Professor Law.

MATHEMATICS

The instructing body of the department for the first semester of the year 1913-14 was composed of Robert Edgar Allardice, Rufus Lot Green and Hans Frederick Blichfeldt, professors; and Franklin Fowler Wolff, acting instructor. During the second semester, Professor Blichfeldt was absent on leave. Miss Sydnie Gardner acted as class assistant during both semesters.

The program of work and attendance was as follows:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Blichfeldt	1. Trigonometry	2	59	.....
Wolff	1a. Trigonometry	2	.....	32
Wolff	2. Solid geometry	2	33	.....
Wolff	2a. Solid geometry	2	.....	22
Green	3. Algebra	5	61	.....
Green	4. Co-ordinate geometry	5	.....	23
Allardice	6. Plane geometry	2	13	15
Wolff	7. General course	3	29	28
Allardice	9. Calculus	3	12	11
Green	10. Adv. co-ordinate geometry	2	7	8
Allardice	11. Adv. calculus	3	10	.....
Allardice	12. Elementary theory of functions.....	3	.....	8
Blichfeldt	13. Non-Euclidean geometry	2	5	.....
Blichfeldt	14. Differential equations	3	9	.....
Allardice	15. Definite integrals	3	.....	8
Allardice	16. Definite integrals	2	2	.....
Allardice	17. Theory of functions	4	2	2
Allardice	21. Projective geometry	2	8	.....
Green	24. Teachers' course in algebra	3	.....	9
Blichfeldt	25. Infinite series	2	4	.....
			254	166

ROBERT EDGAR ALLARDICE,
Professor of Mathematics.

MECHANICAL ENGINEERING

The teaching force in the department for the year 1913-14 was as follows:

William Frederick Durand, professor of mechanical engineering; Guido Hugo Marx, professor of machine design; William Rankine Eckart, professor of experimental engineering; Charles Norman Cross, assistant professor of experimental engineering; Lawrence Edminster Cutter, assistant professor of drawing; Edward John Stanley, instructor in pattern-making; James Bennett Liggett, instructor in foundry; Theron James Palmateer, instructor in machine shop; Robert Henry Harcourt, instructor in forge shop; Charles P. Campbell, instructor in mechanical engineering.

Assistant Professor Everett Parker Lesley was absent on sabbatical leave during the year.

In the first semester 1,132 student hours of instruction were given by ten instructors, or an average of 113 per instructor. The corresponding figures for the second semester are a total of 1,248 student credit hours, and an average of 125 per instructor.

The installation of the equipment in the hydraulic laboratory during the year was materially facilitated by the shop instructors, who have given their spare time to the making of forgings, patterns, and castings without extra compensation.

The policy of adding at least some one definite and valuable item of equipment in the shops and laboratories was followed by the purchase and installation of a special form of electrical dynamo meter for measuring the power of automobiles and motor trucks.

The general work of the year has progressed satisfactorily and without special incident. The classes taught and numbers in attendance are shown in the following tabular form:

INSTRUCTOR	COURSE	KIND OF WORK	Unit Hours	Attendance	
				1st Sem.	2d Sem.
.....*	A	Lecture and special	1	58	58
Harcourt	1a, 1b	Lecture and shop.....	1-3	82	41
Liggett	3a, 3b	Lecture and shop.....	1-3	23	59
Stanley	5, 6a, 6b	Lecture and shop.....	1-3	56	59
Palmateer	7a, 7b, 8	Lecture and shop.....	1-3	33	39
Cutter	11	Drawing	2-3	35	35
Marx, G. H.	13a	Lecture and recitation.....	3	4	37
Marx, G. H.	13b	Drawing	2	4	35
Marx, G. H.	14	Lecture and drawing	4	5	5
Marx, G. H.	16	Lecture and drawing	3	4	.....
Eckhart, Cross, Campbell...	21	Lecture and laboratory.....	3	27	.....
Eckart, Cross, Campbell...	22	Lecture and laboratory.....	3	.....	27
Eckart, Cross, Campbell...	23	Lecture and laboratory.....	3	3	.....
Eckart, Cross.....	26	Lecture and laboratory.....	2	.....	49
Eckart	30	Lecture and laboratory.....	1-2	10	1
.....†	31	Lecture and Special.....	1	12	12
Durand, Campbell..	32	Lecture and office work.....	3	61	.....
Durand, Campbell..	33	Lecture and office work.....	3	.....	7
Durand	34	Lecture	1	2	.....
Durand	35	Lecture	2	22	.....
Durand	35b	Lecture	2	.....	23
Durand	36	Lecture	2	2	30
Durand	37	Lecture	1	20	5
				463	522

*Instruction divided among the instructing staff of the departments of mechanical engineering and electrical engineering.

†Instruction divided among the instructing staff of the department of mechanical engineering.

WILLIAM FREDERICK DURAND,
Professor of Mechanical Engineering.

MEDICINE

The year 1913-14 was the second in which the complete curriculum leading to the degree of doctor of medicine was given by the medical school. Twelve men were granted the degree in May, 1914. There has been a steady increase in the classes, 75 in all being registered during the year: 27 in the first year class, 18 in the second year, 16 in the third year, and 14 in the fourth year. During the year, 32 physicians registered as

special workers and 17 physicians took the special graduate course given, for the first time, the six weeks beginning July 6, 1914. Since a small medical school of high efficiency is planned, the classes are beginning to approach in numbers the limit set by our facilities. It seems probable that the junior class in the coming year will reach the limit of 25 set for the upper classes, since there are only 7 vacancies and some 14 applications from students from other institutions for admission to this class alone.

The subdivision of orthopedic surgery has been organized with temporary quarters in the first floor of the Lane Medical Library building with Dr. Leonard W. Ely, associate professor of surgery, in charge. Drs. W. F. Snow and Langley Porter were granted leaves of absence.

There has been an increase of about one-third in the out-patient clinics, the total number of visits being about 80,000.

During the year, there has been considerable discussion of the union of the medical school with that of the University of California, but no satisfactory basis for such a union could be reached and it has been definitely decided, after a most careful investigation and after obtaining the advice of national authorities on medical education, that the Stanford Medical School shall remain independent.

The graduate course for physicians promises to fill a need on the Pacific Coast and the unusual success with which its inauguration in the Summer of 1914 has been attended is most gratifying.

The Lane Medical lectures by Professor Sir Edward Schäfer on "Internal Secretion" were largely attended and very successful and are to be published as one of the University Series. The popular medical lectures were given during the months of January, February and March and were well received by the general public.

The provisions for the interne year and for the publication of the senior theses have been perfected. The establishment of the policy of having each of the junior internes serve for two months in the Napa State Hospital for the insane has been most successful.

Volume one of Stanford University Medical Bulletin was issued during the year, containing reprints of articles written by members of the faculty.

The organization of the auxiliary to the Stanford clinics, an association to provide proper social service for the patients of the hospital and clinics, has been completed.

During the year, there have been a number of gifts to the medical school. Mrs. Kate Felton Neilson has continued her gift of \$300 per year for the free care of patients in the medical ward. Mr. Charles G. Lathrop left the medical school \$10,000. The Coffin Research Fund, founded by Mr. C. A. Coffin of New York, has been continued, and Dr. Thomas Addis is beginning work under that fund upon chronic malaria. There have been numerous small gifts for the care of patients in the hospital and to the "Patients' Fund," which has been established by the board of trustees and to which gifts in any amount may be made by those interested in the care of clinic patients. The society for exceptional children presented its

local equipment to the children's clinic for psychological work on defective children.

The Lane medical library has been of the greatest value to the medical school. The Sutro library of the State of California is now housed in the third floor of the medical library building.

Following is a detailed statement of the individual divisions of the medical school, including Lane Hospital. The reports for the divisions of physiology and histology, chemistry, zoology, anatomy and bacteriology are not included since they are to be found in the regular departmental reports.

REY LYMAN WILBUR,
Dean.

LANE HOSPITAL

During the year 1913-14, Lane Hospital was controlled by the clinical committee of the medical faculty of Stanford University—Dr. Ray Lyman Wilbur, chairman, Dr. George Burbank Somers, secretary, Stanley Stillman, William Ophüls and Alfred Baker Spalding. Dr. Somers was also the physician superintendent of the hospital.

In addition, the staff comprised the following: Dr. Walter W. Boardman, actinographer; Dr. Harry R. Oliver, serologist; Dr. Caroline B. Palmer, anaesthetist, Dr. Robert Burrows, assistant anaesthetist.

The senior internes were Lovell Langstroth in medicine, Edmund Butler in surgery, and Adolph Schmidt in obstetrics and gynecology.

The junior internes were George De Forest Barnett, Arney Graham Biddle, Emmett James Brady, Charles Nelson Leach, Henry George Mehrrens and Charles Ernest von Geldern.

Since July 1, 1913, the average daily number of patients treated in Lane Hospital was 130.7, divided as follows: Private, 51.6; clinic, 57.5; associated charity, 9.5; San Francisco Maternity, 1.8; free clinic patients, 10.3.

Total number of new patients admitted, 4,017; patients discharged, 3,692; died, 171; remaining July 1, 1914, 154.

During the past year the hospital staff has been devoting its time and energy to the completion of the plans for the new building. Meetings, at which the architects were present, were held at regular intervals, with the result that the plans are practically complete and it is hoped that the actual work of construction will be started at an early date.

The new laundry is now complete and working well. It has been a long-felt need and its opening was the source of much satisfaction to all connected with the hospital.

The second annual report of Lane Hospital and its out-patient department was issued during the year and contains an interesting outline of the work done under the first year of Stanford control. This report naturally grows in interest from year to year as our various fields of activity are enlarged.

Miss Harriet F. MacArthur resigned the position of superintendent of nurses on January 1, 1914, and Miss Sperry, her former assistant, is now acting superintendent. Since the publication of the last annual report of the President, a great change has been brought about in our nursing department by the enactment of the eight-hour law for pupil nurses. In order to meet its requirements we have found it necessary to employ several additional graduate nurses to act as instructors in the various wards throughout the house. We have on our official training school staff fourteen graduate nurses. Miss M. Walsh of the Massachusetts General Hospital assumed the position of instructor in the theory and practice of nursing on February 1st and is a valuable aid to the training school, giving lectures herself, besides personally supervising the regular routine ward work of the nurses. The members of the hospital staff have, in addition to this, given the nurses instruction in their various branches of work and have always willingly coöperated with the superintendent of nurses in anything pertaining to the welfare of the training school. The average number of nurses enrolled for the year has been 75. Their work was divided as follows: General duty, 34; night duty, 20; operating room, 7; diet school, 5; obstetrical, 6; clinics, 2; special, 1. There were also many graduate nurses on private duty throughout the year, the daily average being 7.

In the operating room the following private work was done: Major operations, 398; minor operations, 649; cystoscopic examinations, 51; plaster dressings, 88; examinations, 71. The clinic operations were: Surgical, 367; gynecological, 216; genito-urinary, 98; orthopedic, 76; eye, ear, nose and throat, 344.

The Xray department, under Dr. W. W. Boardman, has examined 1,878 patients, taking 3,681 plates; 198 fluoroscopic examinations were made and 1,222 treatments given. This department is an active teaching laboratory. A new modern interruptless machine has been installed and the equipment generally improved, thereby bringing the laboratory to a high plane of efficiency both from a diagnostic and teaching standpoint.

Dr. A. B. Spalding had charge of the obstetrical service, which is divided into an indoor and an outdoor service. Miss Ada B. Coffey of the Presbyterian Hospital, New York, had charge of the hospital ward and under her a high standard of efficiency was maintained. Dr. Chester B. Moore and Miss Ann Hill managed the outpatient service. Pupil nurses were sent out under Miss Hill's supervision for the hospital and much good accomplished. This department is worthy of every support and encouragement from its friends.

Social service work has been a very important factor in our development during the year. Mrs. Barnett, our social worker, has proven herself to be familiar with this work in all its phases. In conjunction with the auxiliary to the Stanford clinics, which is now a permanent organization, many interesting affairs have been carried out for the benefit of the clinic patients. Mrs. Barnett has at present eleven volunteer workers in the clinics and, with their assistance and the aid of the

auxiliary, a very enjoyable Christmas festival was held in Lane Hall last Christmas. A playroom was inaugurated early in the year and in time it is expected that a well organized rest room will also be provided.

The branch of the auxiliary on the campus has assisted materially in the work of providing comforts and pleasures for the children. One of the enjoyable features was a picnic given to the little ones at which they were entertained on the Campus. We also wish to acknowledge receiving many beautiful flowers sent by the Stanford women for the children's ward and to assure them that they were very much appreciated. Mrs. Barnett has at her command a list of physicians who are always willing and ready to make visits to the homes of the poor who are too sick to come to the clinic, and these men have been called upon many times to give their services to this worthy charity.

The history room is running satisfactorily, and is now in charge of a custodian, together with an assistant and a messenger.

Respectfully submitted,

GEORGE BURBANK SOMERS,
Physician Superintendent.

DIVISION OF MEDICINE

The teaching staff of this division consists of Ray Lyman Wilbur, professor; William Fitch Cheney, Langley Porter, Andrew W. Hoisholt, clinical professors; Thomas Addis, associate professor; Harry E. Alderson and Harold P. Hill, associate clinical professors; Walter F. Schaller and Herbert H. Yerington, assistant clinical professors; Morton R. Gibbons, William R. P. Clark, Florence M. Holsclaw, Arthur A. O'Neill and Julian M. Wolfsohn, clinical instructors. The outpatient medical clinic was conducted by Dr. Ernest C. Dickson with Dr. Peter H. Luttrell, William R. P. Clark, Howard F. Adler, Herbert Gunn, Kenneth J. Staniford, George J. Hall, Harry R. Oliver, Chester D. Sewall and Ray L. Wilbur. Instruction was given in the outpatient clinics, in the wards of Lane Hospital under Dr. Wilbur and Dr. Cheney, and in the medical wards of the San Francisco hospital under Dr. Hill and Dr. Tupper. The total number of patients for the year in the medical service not including those in the San Francisco hospital was distributed as follows:

Outpatient clinic	13,000
Tuberculosis clinic	1,000
Ward of Lane Hospital	550

The children's clinic, in charge of Dr. Langley Porter, attended a total number of 5,383 cases for the year. Dr. Herbert Yerington was in immediate charge of the outpatient work and others in attendance were Drs. Morton R. Gibbons, Florence M. Holsclaw, George D. Lyman, Anthony Huffaker, Lewis D. Mead and Anna G. McBean.

Dr. Harry E. Alderson was in charge of the clinic for diseases of the skin. The total number of patients in attendance was 5,550.

Dr. Walter F. Schaller, assisted by Drs. James R. Dillon and Julian M. Wolfsohn, took care of 5,688 patients in the neurological clinic. To the equipment of this clinic there has recently been added a large size brain microtome. The electric equipment has likewise been brought up to date. Dr. J. M. Wolfsohn has had charge of the neurological patients in the city and county hospital during the year.

The medical service in the city and county hospital has been of great value. It is expected that during the year the new San Francisco hospital will be occupied and this will increase considerably the facilities of Stanford University for clinical work.

Dr. Dickson and Dr. Wilbur have made a clinical study of bacterial endocarditis. Dr. Addis has continued the work upon urobilin and upon liver function, Dr. Alderson upon pityriasis rosea, Dr. Yerington on starch indigestion, Dr. Boardman on polycythemia, Dr. Langstroth on cardiac irregularities, Dr. Wilbur upon pericarditis and botulism, Dr. Schaller upon tumors of the brain.

The new electrocardiograph is being set up in the hospital and will soon permit of additional work in cardiac diseases.

The following table shows the courses given for the year:

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2d Sem.
Wilbur, Addis, Boardman Dickson.....	1. Physical diagnosis and introduction to medicine	7	.....	18
Addis	2. Clinical pathology	3	.....	18
Wilbur	3. Physical therapeutics	2	.....	18
Addis, Wilbur, Dickson....	4. Experimental med. and clinical path....	2½	16	16
Wilbur, Cheney, Addis, Dickson, Boardman.	5. Medicine: sect. work and clinics.....	8	16	.....
Wilbur, Cheney, Addis, Boardman	6. Medicine: clinics	4	.....	16
Wilbur	7. Medicine: set clinic.....	1	22	22
Wilbur	8. Medicine: ward work (Lane hos.).....	4	6	7
Hill	9. Medicine: ward work and clinics (San Francisco hos.)	6	6	6
Boardman....	10. Actinography	1	6	7
Schaller	12. Diseases of the nervous system.....	1	16	.....
Schaller	13. Neurology	2	.....	16
Wolfsohn	14. Neurology (S. F. hos.).....	2	6	6
Hoisholt	16. Psychiatry	1	13	.....
Hoisholt	17. Psychiatry	1	.....	6
Porter	18. Pediatrics	2	16	.....
Porter, Yerington.	19. Pediatrics	5	.....	16
Porter	20. Pediatrics	2	6	7
Alderson	22. Dermatology and syphilis	1½	12	.....
Alderson	23. Dermatology and syphilis	1½	.....	12
Stillman, Spalding, Snow, Wilbur, Ophüls.....	25. History of medicine	1	.....	13
Wilbur	26. Dietetics	1	.....	13
Dickson and the Law Faculty.....	27. Jurisprudence	1	13	.....
			154	217

RAY LYMAN WILBUR,
Professor of Medicine.

DIVISION OF OBSTETRICS AND GYNECOLOGY

Teaching for the year 1913-14 has been done by Alfred Baker Spalding, professor; Henry Walter Gibbons, and Chester Biven Moore, clinical instructors.

Patients in the women's outpatient clinic have been attended by Professor Spalding, Clinical Instructors H. W. Gibbons, Moore; Assistants F. P. Topping, S. O. Beasley, Millicent Cosgrave, L. Michelson, F. W. Kroll, and H. S. Anderton. In addition several physicians have registered as special workers and aided in the care of clinical patients.

The following courses were offered:

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2d Sem.
Spalding	1. Obstetrics	3	16	16
Spalding, Moore.....	2. Practical obstetrics, Outdoor confinement	each 2 weeks	10	2
Gibbons	3. Gynecology	1	12	12
Spalding, Gibbons.....	4. Gynecology, clinics and section work.....	2	12	12
			50	42

One of the interesting things accomplished by the division during the last year has been a closer affiliation between the San Francisco Maternity and the women's clinic. This society has decided to combine its efforts with the interests of Stanford University. They have voted from their treasury the sum of \$1,750 to aid the university in caring for certain patients in the outpatient clinic who are confined at their homes under the direction of students and instructors of Stanford University. Other social workers have volunteered services in the women's clinic. With this financial support added to that given by the university, it is hoped that during the coming year a definite study can be made of the causes of pre-natal death, both medical and sociological, and it is hoped that some practical line of endeavor will result which will lead to a diminution of infant mortality by giving additional aid to women during the period of pregnancy.

Several clinical papers have been published by Professors Spalding and Somers.

ALFRED BAKER SPALDING,
Professor Obstetrics and Gynecology.

DIVISION OF PATHOLOGY

The personnel of the division comprised William Ophüls, professor; Ralph Major, instructor; E. D. Downing, assistant (resigned December

1, 1913); A. A. Atkinson, assistant (from January 1, 1914); Margaret B. Post and Ben Romero, technical assistants.

Professor Ophüls continued his work on chronic lead poisoning in guinea pigs. He also did some experimental work on the results of embolism of the arterioles in guinea pigs, with hardened erythrocytes of triton torosus and chondrotus tenebrosus, a report of which was published by the society of experimental biology and medicine. In conjunction with Professor Wilbur a case of botulism with important findings in the brain was reported to the American Association of Physicians.

Dr. Major completed an experimental paper on the effects of anaphylaxis on the nitrogen metabolism in rabbits.

Dr. Atkinson has started a series of experiments on fat embolism in rabbits.

Mr. Jean R. Oliver, a medical student, completed his thesis on endothelioma of the lymph glands, which was published in the journal of medical research.

Miss E. E. Boodrich, also a medical student, finished her thesis on the use of paramoecia in the study of biological reactions in man.

Dr. S. L. Hass took up the study of regeneration of cartilage and has completed a paper on the regeneration of cartilage and bone with a special study of these processes as they occur at the chondrocostal junction in rabbits.

The following table shows the courses given in the division during the year and the attendance of students.

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2d Sem.
Ophüls.....	1. General pathology	9½	.....	18
Major	2. General pathology	1	.....	13
Ophüls.....	3. Special pathology	4	16	16
			16	47

The number of autopsies this year will probably again reach about 250, and the number of pathological specimens examined, about 1,000.

WILLIAM OPHÜLS,
Professor of Pathology.

DIVISION OF PHARMACOLOGY

Owing to the transference of the laboratory of pharmacology from Stanford University to San Francisco it has been necessary to devote considerable time to its re-organization.

Fourteen students have taken the regular course in pharmacology.

Mr. Ehrenclou has been carrying on some work on the significance of eosinophilia which has not yet been published.

Mr. Watanabe of the chemical department has assisted in clearing up the chemical structure of the mistletoe base in the hope that this substance can be perfected for clinical use. The first paper on mistletoe was published three years ago.

Work has been begun for the American Medical Association on the chemistry of diphtheria antitoxin; \$100 was appropriated by that association for this work.

ALBERT CORNELIUS CRAWFORD,
Professor of Pharmacology.

DIVISION OF SURGERY

The teaching staff for the year has been as follows: Stanley Stillman, Emmet Rixford, professors; Rufus L. Rigdon, clinical professor of genito-urinary surgery; Albert B. McKee, clinical professor of ophthalmology; Edward C. Sewall, clinical professor of otology, laryngology and rhinology; Leonard W. Ely, associate professor of surgery (orthopedic); Frank E. Blaisdell and Leo Eloesser, assistant professors; Harrington B. Graham, assistant clinical professor of otology, laryngology and rhinology; John F. Cowan, instructor; George Rothganger, George P. Wintermute and James Eaves, clinical instructors.

The accompanying table shows the courses given and student attendance:

INSTRUCTOR	COURSE	Hours per Week	Attendance	
			1st Sem.	2d Sem.
Stillman, Blaisdell....	1. General surgery	2½	.....	18
Eloesser, Blaisdell....	2. Fractures, dislocations and deformities	2	.....	18
Eloesser	3. Recitations and demonstrations.....	2	.....	18
Stillman, Rixford.....	4. Regional surgery	2	16	16
Cowan, Blaisdell....	5. Surgical pathology	2	16	16
Stillman	6. Surgical clinics and section work.....	5	16	16
Stillman	7. Surgery: ward work and clinics.....	3	6	7
Rixford, Eloesser....	8. Surgery: ward work and clinics.....	4	7	6
McKee	9. Ophthalmology	2	6	7
Sewall, Graham, Winter- mute.....	10. Otology, laryngology, rhinology	2	6	7
Rigdon	11. Genito-urinary surgery	3	6	4
Ely	12. Orthopedic surgery	2	6	7
Stillman	13. Operative surgery	2	6	7
			91	147

There has been a steady growth in the number of surgical patients and instruction has been given throughout the year, both in the outpatient clinic, in the wards of Lane Hospital under Dr. Stillman and in the wards of the San Francisco Hospital under Dr. Rixford and Dr. Eloesser. The total number of cases treated in the surgical clinic during the year was 11,484, of which 948 were new. During this period 636 patients were in the wards of Lane Hospital, most of them being operative cases. The outpatient clinic was under the immediate charge of Dr. G. Rothganger, assisted by Drs. D. N. Richards, C. E. Hyde, S. L. Hass, M. E. Rumwell, W. W. Winterberg and L. O. Kimberlin.

In genito-urinary diseases Dr. R. L. Rigdon was in charge of the clinic, assisted by Drs. C. H. Woolsey, F. M. Gedney and Howard Somers. The total number of cases treated in this clinic was 12,084, of which 948 were new.

In ophthalmology the clinic was under the immediate charge of Dr. A. B. McKee, assisted by Drs. J. R. Burrows, A. S. Green, L. D. Green, A. E. Peck, H. Barkan and R. K. Hutchings. The total number of cases treated was 8,112, of which 1,608 were new.

In otology, laryngology and rhinology the clinic and instruction were conducted by Drs. E. C. Sewall and H. B. Graham, assisted by Drs. G. P. Wintermute, H. Y. McNaught, G. Caldwell, M. E. Lando, H. S. Moore, The total number of cases treated was 5,004, of which 1,596 were new.

Orthopedic surgery was under the charge of Associate Professor L. W. Ely, assisted by Dr. A. L. Fisher. This clinic was housed in the lower floor of the Lane Medical library building which was fitted up with temporary partitions for this purpose. 1,740 cases were taken care of during the year, of which 492 were new.

The laboratory in surgical pathology was conducted by Drs. F. E. Blaisdell and J. F. Cowan. The increase in size of the laboratory, due to recent alterations, proved of great advantage. Dr. Rothganger conducted a number of experiments upon blood vessel surgery, Dr. S. L. Hass upon transplantation of bone and regeneration of bone and cartilage, Dr. Barkan upon the pathology of diseases of the eye, Dr. Zaicheck and Dr. Eaves started work upon Abderhaldens' test for cancer. Dr. Ely, during the year, has carried on a large series of experiments on the resection of knee joints and on injuries to the cartilages. Mr. O. A. Welsh, senior student, did considerable pathological work upon the bursae in preparation for his senior thesis.

STANLEY STILLMAN,
Professor of Surgery.

PHILOSOPHY

The faculty of the department consisted, during the first semester of the year 1913-14, of Dr. Warner Fite, of the University of Indiana, acting professor, and Dr. George Holland Sabine, associate professor and acting executive head; during the second semester, of Dr. Sabine alone. Pro-

fessor H. W. Stuart was absent on sabbatical leave during the entire year.

Six students were enrolled as major students in philosophy. The courses given, with the enrollment in each, were as indicated in the accompanying table:

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
Sabine	1. Elementary logic	3	65	.....
Fite	2. Elementary ethics	3	47	.....
Sabine	3. History of philosophy	3	21	12
Sabine	4. Philosophy of the XIX century.....	3	7	.....
Sabine	5. Phil. in XIX century life.....	3	.....	24
Sabine	6. Advanced logic	3	.....	40
Fite	7a. Contem. tendencies in philosophy.....	3	8	.....
Sabine	8. History and application of evolution..	2	.....	25
Fite	10a. Problems of consciousness	2	5	.....
Sabine	Seminary.....	2-4	1	3
			154	104

GEORGE HOLLAND SABINE,
Associate Professor of Philosophy.

PHYSICAL TRAINING AND PERSONAL HYGIENE

ENCINA GYMNASIUM

The staff for the year consisted of Royce Reed Long, assistant professor and director; Harry Wilfred Maloney, assistant in fencing and boxing, and the following general assistants: H. A. Wyckoff, J. F. Chapman, G. S. Holman, E. R. Knollin, P. E. Leland, L. R. Reynolds, C. H. Wollaston, A. B. Stuart, E. T. Scott, N. O. Best and J. H. Thoburn.

The accompanying table gives the class enrollment for the year:

INSTRUCTOR	COURSE	Hours Weekly	Unit Hours	Attendance	
				1st Sem.	2d Sem.
Long, Maloney and assistants..	1. Physical training, personal hygiene	3 Gym.	1	338	277
Long	2. Physical training methods....	3-6	1-2	9	10
Long	3. Public health	*2 Lect.	1	15	.....
Long	4. Individual hygiene	*1 Lect.	1	.....	23
				362	310

*Reference reading and required trips.

ROYCE REED LONG,
Assistant Professor of Physical Training and Director.

PHYSICAL TRAINING AND PERSONAL HYGIENE

ROBLE GYMNASIUM

The teaching in Roble gymnasium has been carried on by Clelia Duel Mosher, assistant professor of personal hygiene and director of the gymnasium; Florence Cotten Burrell, and Etta L. Paris, instructors; Henry Wilfred Maloney, teacher of fencing; Faith Swift, gymnasium assistant and custodian.

All the teaching in hygiene has been given by the director of Roble gymnasium. This has been arranged as follows:

1. A hygiene conference, with such physical examination as has seemed advisable, has been given every woman entering the university as a new student, and all women returning after an absence of one or more semesters. This conference takes the place of the entrance physical examination usually given in most colleges by seven or eight examiners.

2. A conference with every woman enrolled in physical training work has been held once or twice a month, thus insuring a close supervision of the effect of the work on the individual student.

3. Informal talks on hygiene, eugenics and kindred topics have been given to small groups of women who are not taking active exercise at the time. Selected readings on similar topics have taken the place of these talks when other duties have occupied the time of the director. These classes have been held from 15 to 20 times per week for both semesters.

The course in personal hygiene (physical training II), which had the first year a membership of 14, the second year 48, this year numbered 76. The women, having learned in this course that physical training is laboratory work in personal hygiene, and appreciating their individual need of it, are enrolling in greater numbers in the gymnasium classes.

By the nature of the work in the gymnasium and its open air divisions, the ideal hours, from the standpoint of hygiene, are 11:15 in the morning and 4:30 in the afternoon. The coöperation of other departments has been sought by the request that, in the making of their schedules, these two hours be left free as far as possible for work in physical training.

Special emphasis has been laid on the recreational side of the work, under the close supervision of the medical adviser, in order to shape all toward future as well as present mental and physical efficiency.

The position of custodian of the gymnasium has been made to serve as a scholarship by being given to a selected graduate student, thus ensuring the most intelligent administrative service in this position, on which the smooth running of the work in the gymnasium is very dependent. This position has been held by Miss Helen Campbell, president of the women's league, 1912; Miss Catharine Cox, P. B. K., who received her A. M. in German, 1913; Miss Faith Swift, A. M. in Zoology in 1914.

Dr. Mosher has continued her observations looking toward establishing a functional index, which shall be a practical measure to determine

the effect of the physical training work on the health and efficiency of the women.

The accompanying table gives the statistics of instruction:

INSTRUCTOR	COURSE	Hours per Week	Unit Hours	Attendance	
				1st Sem.	2d Sem.
Mosher, Burrell, Paris.....	Physical training and personal hygiene I: Division A.....	3	1	153	157
Mosher, Burrell, Paris.....	Division B.....	3	1		
Mosher, Burrell, Paris.....	Division C.....	3	1		
Mosher, Maloney.....	Division D.....	3	1		
Mosher	Physical training II.....	2	2	76	.....
Paris	Physical training III.....	2	2	8	.....
Paris	Physical training IV.....	2	0	.....	8
Burrell	Physical training V.....	2	2	.....	14
Burrell	Physical training VI.....	3	1	4	.....
				241	179

An office hour, open to any woman in the university, has been held five days in the week in the office of the public health committee in the inner quadrangle. An increasing number of women come for consultation.

The work of the medical adviser to women has been intimately associated with the hygiene work. In accordance with the policy of the public health committee, no medical treatment has been given. Conditions requiring more than alteration in the hygiene of the individual have been referred to some practicing physician chosen by the student. The medical adviser has also had the administration for the public health committee of the entrance vaccination requirement for the women.

CELIA DUEL MOSHER,
Director and Medical Adviser to Women.

PHYSICS

The faculty of the department of physics for the year 1913-1914 consisted of Professor Fernando Sanford, Associate Professor Frederick John Rogers, Assistant Professors Elmer Reginald Drew and Joseph Grant Brown, and Instructors Perley Ason Ross and Harry Carleton Burbridge. The teaching assistants were Bertha Blanchard Howell, Philo Fay

Hammond, Robert Clay McLean, and Alta Echo Wiseman. Herbert Rovell Benham was mechanical assistant in the department. Associate Professor Rogers was absent on leave during the year. The department enrolled ten major students, of whom six were graduates and four undergraduates. Two bachelor's and two master's degrees were given in the department.

The courses of instruction given with the registration in each course are shown in the accompanying table :

INSTRUCTOR	SUBJECT	Lecture Hrs.		Lab. Hrs.		Attendance	
		1st Sem.	2d Sem.	1st Sem.	2d Sem.	1st Sem.	2d Sem.
Ross, Burbridge.... (Hammond)	1. Dynamics	1	1	9	12	34	16
Drew (Wiseman)	2. Elec. and mag.....	1	.....	9	.....	3	.....
Ross (McLean)....	3. Heat .....	.....	1	.....	6	.....	12
Brown (Bur- bridge).....	4. Sound .....	.....	.....	9	.....	4	.....
Brown (Ham- mond)	5. El. optics .....	.....	.....	.....	9	.....	8
Brown (Howell)..	6. Eng. phys.....	3	3	9	6	30	30
Ross (Wiseman)...	7a. Gen. phys.....	2	.....	6	.....	23	.....
Drew (Wiseman)...	7b. Gen. phys.....	.....	2	.....	6	.....	20
Drew (McLean)....	9. Elec. measurem'ts	1	1	15	9	27	4
Sanford	10. Adv. optics .....	.....	.....	6	.....	2	.....
Sanford	11. Adv. gen. physics..	5	5	.....	.....	6	6
Sanford	13. Teachers' physics..	1	1	.....	.....	5	5
Sanford	16. Literature of phys..	2	2	.....	.....	7	7
Sanford	19. Investigation .....	.....	.....	6-18	6-18	5	6
						146	114

FERNANDO SANFORD,
Professor of Physics.

PHYSIOLOGY AND HISTOLOGY

The staff of the department for the year consisted of Oliver Peebles Jenkins and Frank Mace McFarland, professors; Clara S. Stoltenberg, associate professor; James Rollin Slonaker and Frank Walter Weymouth, assistant professors; William E. McKay, acting instructor; Roscal L. Draper and Leonard R. Jenkins, graduate assistants; and Forest E. Boyd, Thomas A. Card, Marion R. King, John E. Paulson, and Lloyd R. Reynolds, undergraduate mechanical assistants.

The accompanying table shows the courses given and the attendance for each semester :

INSTRUCTOR	COURSE	Unit Hours	Hours per Week		Attendance	
			Lect.	Lab.	1st Sem.	2d Sem.
Jenkins, Weymouth Kay, Draper.....	1. General anatomy and physiology	3	1	5	57	49
Jenkins, Slonaker, Kay.....	2. Physiology of muscle, blood and circulation.....	4	2	5	27	.....
Jenkins, Slonaker, Draper.....	3. Physiology of digestion, respiration, etc.....	4	2	5	.....	28
Stoltenberg..	4. Structure of sense organs..	3	1	6	25	1
Stoltenberg..	5. Structure of the nervous system	3	1	5	3	23
Jenkins, Weymouth	6. Physiology of the nervous system	3	1	5	7	24
Jenkins	8. Special courses in physi- ology	3	2	.....	7	7
McFarland ..	9. Histology	3	1	5	29	25
McFarland ..	9a. Histological technique.....	1-2	.....	3-6	.....	4
McFarland ..	13. Special courses in histology	2-5	.....	6-15	3	2
.....	14. Journal Club	1	.....	.....	19	21
					177	184

The following notes indicate some of the more important lines of work occupying the attention of members of the department:

Professor McFarland has continued his work on the opisthobranch mollusca of the Pacific and on spermatogenesis in various forms.

Dr. Jaime De Angulo was engaged on the heterochromosomes in the spermatogenesis of certain insects.

Associate Professor Stoltenberg continued her investigations of the nerve tracts in the brain and spinal cord of rodents.

Assistant Professor Weymouth published the results of work done during his year's leave of absence at Johns Hopkins University medical school on the relation of metathrombin to thrombin. The reference will be given in the list of faculty publications. He has also been engaged on certain questions of eye-muscle balance and has continued his study of the life history of the edible crab, *Cancer magister*.

Assistant Professor Slonaker and Mr. Card have continued the study of the effects of a strictly vegetable diet on the fecundity of the albino rat and upon the character, number and rate of growth of the young through successive generations, the object being to determine the effect on the race. Dr. Slonaker has practically completed a paper on the development of the eye and its appendages in the English sparrow. In

conjunction with Dr. Carey A. Wood of Chicago, he is continuing the detailed study of the visual apparatus of the birds of the world.

OLIVER PEEBLES JENKINS,
Professor of Physiology.

PSYCHOLOGY

During the academic year 1914-15 instruction was given in the department of psychology by Professors Frank Angell and Lilien J. Martin and by Dr. J. E. Coover, fellow in psychical research, in the courses listed below :

INSTRUCTOR	COURSE	Unit Hours	Attendance*	
			1st Sem.	2d Sem.
Angell	1. General psychology	4	157	.....
Martin	1a. Mental hygiene	3	.....	119
Martin, Angell.....	2. Beginners' laboratory	3	20	16
Angell	2a. Experimental psychology	2	.....	12
Martin	3. Abnormal psychology	2	.....	157
Martin	4. Fine arts	2 or 3	23	.....
Angell, Martin.....	7. Psychological literature.....	1	3	.....
Angell, Martin.....	9. Research	Indef.	2	1
Coover	9a. Psychical research.....	2	.....	8
			205	313

*Attendance in this connection means not registration but number in class at the end of the course.

It is greatly to be desired that the seating capacity of the departmental lecture room should be enlarged and better ventilating facilities provided. The room, designed to seat 75 comfortably, and to crowd in 90, is now called upon to seat over 150, and this without other than door and window ventilation.

FRANK ANGELL,
Professor of Psychology.

ROMANIC LANGUAGES

The faculty of the department for the year 1913-1914 consisted of Professor Oliver Martin Johnston, Associate Professor Colbert Searles, Assistant Professor Aurelio Macedonio Espinosa, Instructors Robert Edouard Pellissier and Louis P. de Vries; teaching assistants, George L. Lawrence, Miss M. F. Allen (for the first semester); non-teaching assistants, Mrs. J. R. Rouiller, Miss Isabel Venard.

Associate Professors Clifford Gilmore Allen and Albert León Guérard were absent, the former on sabbatical leave, the latter filling a professorship in Rice Institute, Houston, Texas.

Accompanying this report is a list of the courses given with the attendance in each.

INSTRUCTOR	COURSE	Unit Hours	Attendance	
			1st Sem.	2d Sem.
DeVries	1a. Elementary French	3	80	74
Searles	1b. Elementary French, reading course....	3	41	24
Pellissier, DeVries...	2. Second year French composition.....	3	40	36
Pellissier, DeVries ..	3. Modern French reading.....	2	68	66
Searles	4. French pronunciation	1	7	2
Pellissier	5. Reading and writing of French.....	3	13	15
Pellissier	6. Advanced French composition.....	2	5	6
Searles	7. Outline in the history of French liter- ature	3	17	22
Searles	8. Classical French	3	21	22
Searles	9. History of French literature in the nineteenth century	3	6	9
Pellissier	12. The French romantic movement.....	2	6	.....
Pellissier	13. The modern French novel.....	2	.....	12
DeVries	13a. Realism in the French drama.....	2	.....	11
Espinosa, Lawrence, Allen.....	14. Elementary Spanish	3	162	109
Espinosa	15. Second year Spanish composition.....	3	28	25
Lawrence	16. Modern Spanish reading.....	2	61	54
Espinosa	18. Advanced Spanish composition.....	2	6	8
Espinosa	20. Modern Spanish drama.....	3	12	.....
Espinosa	20b. Contemporary Spanish drama.....	2	.....	11
Espinosa	24. Old Spanish ballads.....	3	.....	7
Johnston	25. Elementary Italian	3	15	12
Johnston	27. Dante and the divine comedy.....	2	.....	16
Johnston	28. Teachers' course in French.....	2	5	.....
Johnston	29. Introduction to old French.....	3 & 2	5	4
Johnston	31. Chretien de Troyes.....	2	2	2
			600	545

Toward the end of the second semester Professor Guérard resigned, having accepted a professorship in Rice Institute. To fill this vacancy, Dr. de Vries' appointment as instructor was renewed. At the close of the year Professor Searles resigned to accept a professorship in the University of Minnesota.

Instructor Pellissier was promoted to the rank of assistant professor.

Professor Johnston and Dr. de Vries spent the summer in travel and study in Europe and Professor Espinosa gave courses in the summer school of the University of Chicago.

OLIVER MARTIN JOHNSTON,
Professor of Romanic Languages.

ZOOLOGY

The teaching staff in the department of zoology for the year 1913-14 consisted of Professors Charles Henry Gilbert, George Clinton Price, Harold Heath; Associate Professor John Otterbein Snyder; Acting Instructors Willis Rich, William Francis Thompson.

Associate Professor John Otterbein Snyder was absent during the second semester on sabbatical leave. Assistant Professors Edwin Chapin Starks and Walter Kenrick Fisher were absent on leave during the entire year.

The courses of instruction offered, with the attendance, are given in the accompanying table:

INSTRUCTOR	COURSE	Unit Hours		Attendance	
		Lect.	Lab.	1st Sem.	2d Sem.
Price, Rich.	1. Elementary zoology	1	6	42	78
Heath	3. Invertebrate anatomy	1	6	9	10
Heath	4. Invertebrate embryology .....	...	6	.....	5
Heath	5. Invertebrates (adv.) .....	...	6-9	5	2
Heath	6. Microscopical anatomy .....	...	6	4	.....
Snyder, Rich	9. Vertebrates (class) .....	...	6	16	8
Snyder	Vertebrates (special) .....	...	...	1	.....
Snyder, Thompson	10. Comp. anatomy: vertebrates....	...	9	5	7
Price	11. Vertebrate embryology	1	5	27	8
Price	Vertebrate embryology (sp.)....	...	...	.....	1
Gilbert	12. Ichthyology .....	...	6-9	2	4
Gilbert	13. Ichthyology (adv.) .....	...	12	5	3
Gilbert	14. Journal club	2	...	10	8
				126	134

Professor Gilbert spent the summer of 1913 in the field, continuing his work on the migration and habits of the salmon of the northwest coast, on behalf of the Fisheries Department of British Columbia. These were later elaborated and form the basis of a report.

Professor Heath during the summer of 1913 collected data regarding the fishes and birds of southeastern Alaska for the U. S. Fish Commission and Association of Audubon Societies. These were subsequently incorporated in a report. He also continued his studies upon west coast molluscs of economic importance.

Associate Professor Snyder continued his studies of the fauna of the quaternary Lake Lahontan region. Through the interest of the U. S. Bureau of Fisheries an expedition was made to the field. The material collected will serve as a basis of a future report.

Acting Instructor Rich completed a study of the steelhead trout (*Salmo gairdneri*) prior to its first migration to the sea. Acting Instructor Thompson reported upon a collection of fishes from the region of Cape Horn.

CHARLES HENRY GILBERT,
Professor of Zoology.

APPENDIX III

REPORTS OF COMMITTEES

STUDENT AFFAIRS

The members of the committee on student affairs for 1913-14 were: Dr. Orrin Leslie Elliott, Professors John Charles Lounsbury Fish, Charles Andrews Huston (second semester), Associate Professors Lewis Madison Terman, John Otterbein Snyder and Arthur Bridgman Clark; also Mrs. Evelyn Wight Allen (member in matters concerning women).

During the year discipline was imposed upon recommendation of the men's student council as follows:

No. of Students	Offense	Form of Discipline
2	Fraud in examination or class work	Suspension one semester
1	Drunkness and ungente- manly conduct	Suspension one semester
4	"Plug Ugly" poster affair....	Suspension ten days to three weeks
4	Boisterous conduct	Probation
	Disorder in a fraternity house	Probation of all members
12	Hazing freshmen (Lagu- nita)	Suspension, ten days to three weeks
3	Hazing a senior	Reprimand
	Improper public initiation....	Letter of condemnation to the organization

A printed "Manual of Student Control" was prepared during the year by the student conferences and faculty committee. It is designed to furnish needed information both to professors and students serving on committees and to students generally. The scope of this manual is indicated by its three main headings:

I. The duties and responsibilities of the faculty committee on student affairs.

II. The existing regulations governing student conduct.

III. The duties and responsibilities of the university conferences

Certain duties set forth in the manual as devolving upon the student conferences, relating to a prompt filing of minutes and documents are considered important and should be more strictly attended to in the future.

The faculty committee has been very apprehensive at times because certain grave matters did not receive the settlement which they seemed to deserve.

Two dangers threaten the permanence of student control by men; one, the exaggerated importance in student eyes of the so-called "prominent fellow"; the other, the great burden of routine work connected with the duties of the council. The latter may prove too burdensome to be thoroughly executed by the active men elected to carry out its responsibilities. Both of these dangers are touched upon in the annual report for 1913-14 to this committee by Chairman Summerfield of the men's conference. Mr. Summerfield does not agree that the first danger is imminent; the second he recognizes, and recommends for its mitigation curtailment in numbers of positions on committees to which one student shall be elected.

In spite of the apprehensions which are still felt it must in justice be admitted that the positive work done by the conferences during the year has been considerable, and it is hoped that the responsibilities resting upon the conference members may in the future be more clearly felt and more promptly met.

ARTHUR BRIDGMAN CLARK,
Chairman.

PUBLIC HEALTH

The members of the committee on public health for the year 1913-1914 were J. P. Mitchell, C. H. Gilbert, R. R. Long, A. W. Meyer and Clara S. Stoltenberg. Dr. Clelia Mosher met with the committee regularly. Of these J. P. Mitchell, A. W. Meyer and Clara S. Stoltenberg were members of the board of directors of the student's guild. Miss Fannie Hadden served as the secretary of the committee.

The usual inspection of the rooms occupied by students on the campus and in Palo Alto was carried out during the year. The existing regulations were extended to allow for the increased capacity of houses provided with permanent sleeping porches.

The existing requirements concerning the vaccination of all students were rigidly enforced. A statement of these requirements was submitted to the secretary of the state board of health, and pronounced by him to be in accordance with the state laws. The failure of the members of the faculty to comply with the state law regarding vaccination was brought to the attention of the university authorities, with the result that the board of trustees required the members of the faculty to comply with the law.

The university authorities were requested to replace the common roller towels supplied in the lavatories with individual towels. Individual paper towels are now supplied in all the university buildings.

One student was required to leave the university as a result of refusal to observe proper precautions while suffering from a contagious disease.

JOHN PEARCE MITCHELL,
Chairman.

DELINQUENT SCHOLARSHIP

The record of action by the committee for 1913-14 may be classified as follows:

Withdrawals	47
First failures	150
Probation other than first failure.....	50
	— 247

Of the 47 withdrawals on account of deficiencies in scholarship, 18 had received a record of "first failure" in the preceding semester, 27 in some earlier semester, while 2 were "first failures," adjudged by the committee to be unusually serious and so denied a second trial.

Of the total of 150 failures for the year, 141 were men and 9 women; or, stated in percentages of the number of each group registered in the university, 10 per cent of the men failed and 1.8 per cent of the women.

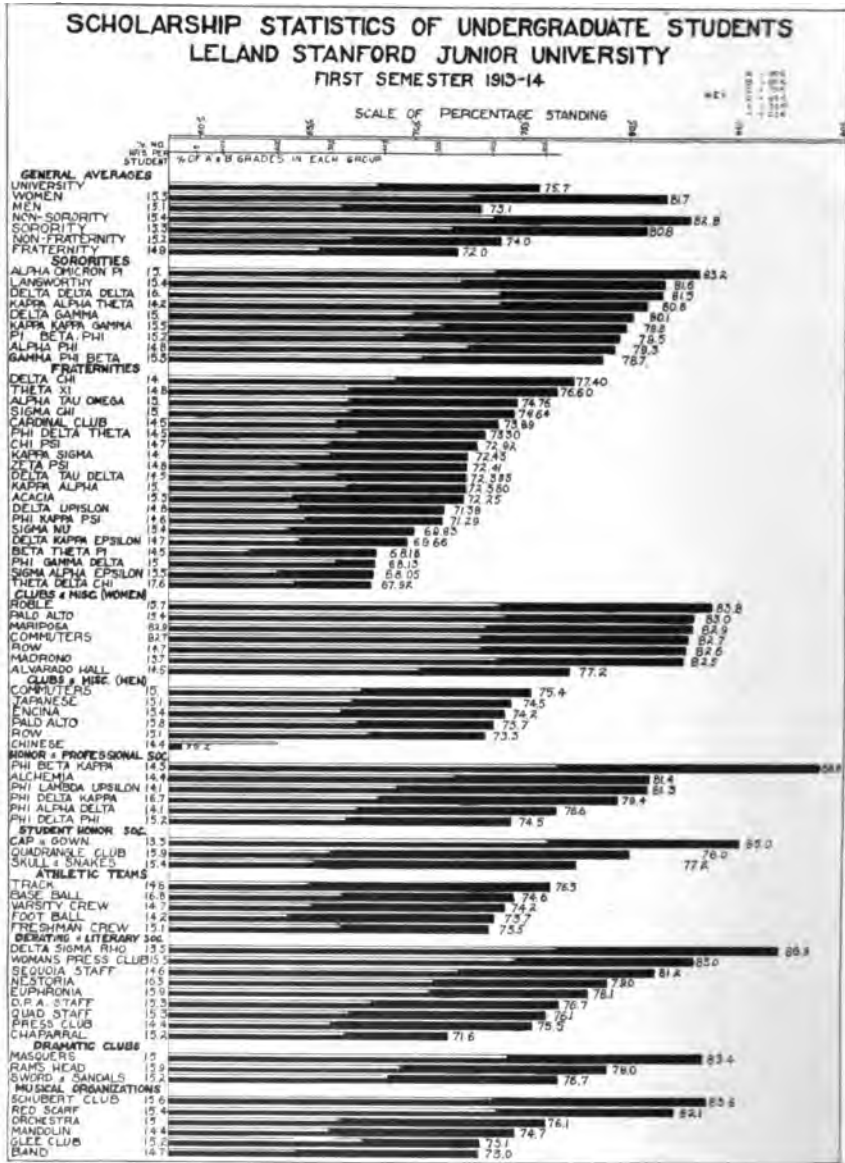
In the following table men and women are grouped separately by residence, the percentage of failures being given for each group:

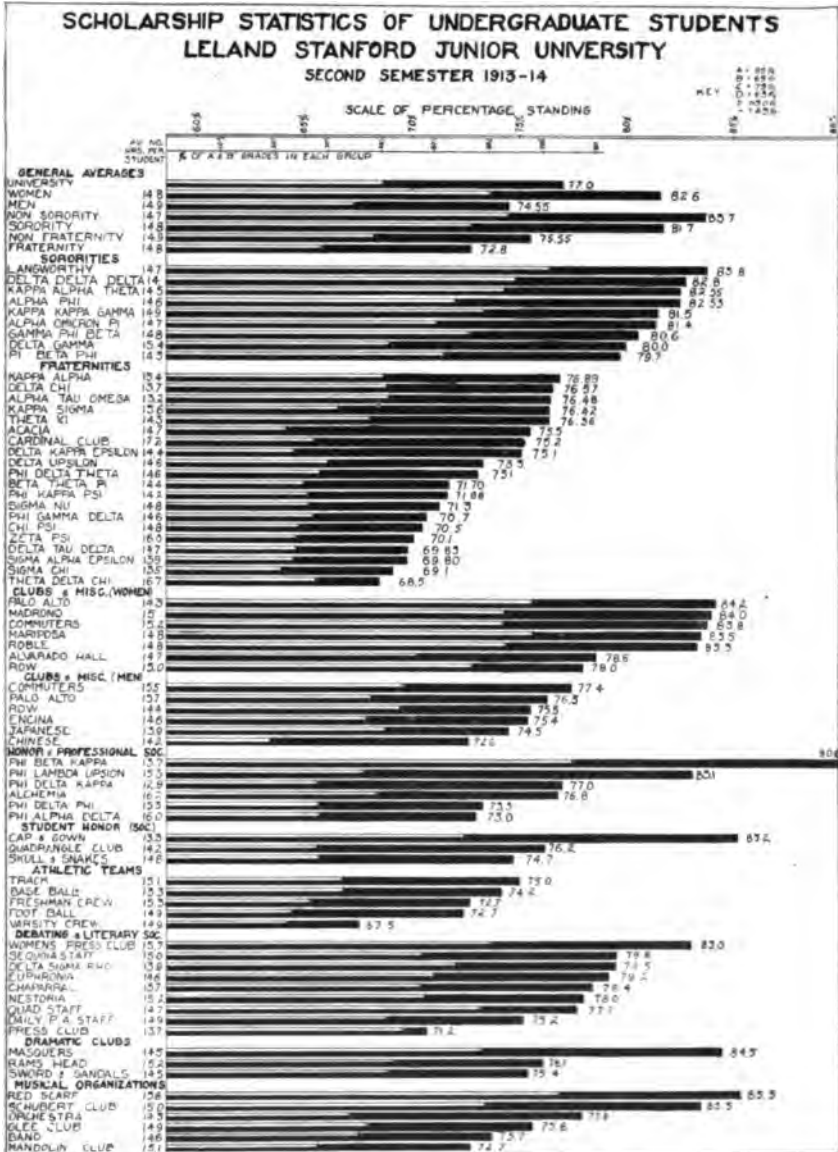
Residence—	Men	
	Total Number.	Per Cent Failing.
Palo Alto and Mayfield.....	300	14
Encina Hall	320	13.7
Private residences on Campus.....	130	18
Commuters from San Jose, etc.....	70	14
Fraternities	476	15
	Women	
	Total Number.	Per Cent Failing.
Palo Alto and Mayfield.....	90	0
Roble Hall	90	2
Madrono Hall and private residences, Campus.....	105	1
Commuters from San Jose, etc.....	40	0
Sororities	238	2.5

In 1912-13, 13.5 per cent of the total registration of men were deficient in scholarship. This year 15 per cent were deficient, the greatest increase being among the non-fraternity men residing in private residences on the campus and those commuting from nearby points. The scholarship of the fraternity men and the non-fraternity men residing in Palo Alto and Mayfield shows a decided improvement over last year. Among the women there is increase in scholarship deficiencies among those residing in Madrono Hall and private residences on the campus. No failures were recorded among the commuters and the women residing in Palo Alto and Mayfield.

The statistics presented above are based on actual scholarship deficiencies. In the two charts which follow the total grades of the undergraduates as reported by the various instructors have been reduced to a numerical basis, indicated by the key in the upper righthand corner of each chart. There are two sets of percentages on each chart, the black lines showing the averages of groups based on all grades and the white superimposed lines an entirely distinct set of averages based on the total of A and B grades in the respective groups.

CHARLES HENRY GILBERT,
Chairman.





VOCATIONAL GUIDANCE

The newness of this field of endeavor made it seem advisable for the vocational guidance committee to approach its task in a spirit of conservatism, aiming at the first to inform itself thoroughly in regard to the matters entrusted to it, and to direct the thoughts of others toward their consideration rather than to attempt any immediate advisory activity. In fact, it was the judgment of the committee that it could best serve the purpose for which it was created by limiting its efforts to finding out facts concerning the vocations in which our entering students are interested or into which our graduates have gone, and to make these facts available to those who are determining the choice of and preparation for a vocation.

As a practical step toward this end the committee arranged to have each student fill out a card at registration inquiring what vocation he intended to follow after leaving the university, whether he was arranging his studies with a view to preparing himself for a vocation, and what he has done outside the university, either in another school, or in practice, to prepare himself for a vocation.

The information thus received has been compiled and studied. The data are too voluminous for this report, but will have significance in the study of our problem.

A second step toward the same end was to send a carefully prepared questionnaire to the graduates (up to the class of 1907) who had been engaged in vocations a sufficient length of time to make their experience and conclusions of probable value.

Over five hundred replies have been received, classifying under about twenty main divisions of present vocations, with about one hundred and thirty sub-divisions into specific occupations. These replies contained much of interest and value and careful digests were made by the committee. This material, arranged by vocations, will be made available for inspection by the members of the academic council and their co-operation is solicited in utilizing it, together with other pertinent facts, in the preparation of pamphlets containing information useful to one who is deciding upon a vocation. It is hoped that the small appropriation necessary for the preparation of these pamphlets will be provided.

For the forthcoming year the committee has set itself as its main task the publication of the available facts, in brief form, covering as many vocations of interest to college graduates as possible.

The resignation of Professor Sabine from our faculty has deprived the committee of its original chairman; the committee will feel the loss of his comprehensive grasp of its problems and his wise counsel.

GUIDO HUGO MARX,
Chairman.

APPENDIX IV

REPORTS OF EXECUTIVE OFFICERS

THE REGISTRAR

The number of students in attendance in 1913-14 was 1,906. Of these, 1,271 had previously been in attendance, 635 were new students. As compared with 1912-13, there was an increase in old students of 73 and an increase in new students of 41, making a total increase of 114. The total attendance for the year (1,906) does not, of course, represent the attendance at any one time. The total registration for the first semester (which is always larger than for the second semester) was 1,755; and the maximum attendance at the highest point was probably 30 or 40 less—approximately 1,720, or 500 women and 1,220 men.

STATISTICS OF REGISTRATION, 1909-1914

	1909-10	1910-11	1911-12	1912-13	1913-14
Old students	1,135	1,177	1,203	1,198	1,271
New students	609	581	571	594	635
	<hr/> 1,744	<hr/> 1,758	<hr/> 1,774	<hr/> 1,792	<hr/> 1,906
Percentage of old students returning	68	67	68.4	67.5	71
From California	1,364	1,371	1,377	1,325	1,383
From other States and for- eign countries	380	387	397	467	523
Percentage outside California	21.8	22	22.4	26	27.4

AVERAGE AGE AT MATRICULATION

	1909-10	1910-11	1911-12	1912-13	1913-14
Graduates*	28.2	29.7	25.6	25.8	27.5
Advanced standing	22.5	21.6	22.4	22	21.6
Freshmen	20.2	21.5	20.2	19.5	19.4
Specials	23.7	26.5	23.2	24.4	23.7

AGE OF FRESHMEN AT MATRICULATION

Under 17	5	4	8	3	9
17-18	29	35	41	42	41
18-19	104	108	104	98	100
19-20	117	122	94	95	114
Over 20	145	123	128	113	103
	<hr/> 400	<hr/> 392	<hr/> 375	<hr/> 351	<hr/> 367

*From other colleges.

STATISTICS OF ENTERING CLASS 1913-14

	Number Entering	Number Returning 1914-15	Failed in Scholarship
From colleges—			
Graduates	53	23	0
With advanced standing.....	161	115	18 (11%)
Without advanced standing....	4	3	0
	<hr/> 219	<hr/> 141	<hr/> 18 (8.2%)
From normal schools	9	6	0
From preparatory schools—			
On recommendation (wholly or mainly):			
In full undergraduate standing	356	286	46 (12.9%)
In partial standing.....	6	....	0
Wholly on examination:			
In full standing.....	1	1	0
In partial standing.....	0	....	0
	<hr/> 363	<hr/> 287	<hr/> 46 (12.7%)
As special students.....	44	24	12 (27.2%)
	<hr/> 635	<hr/> 458	<hr/> 76 (10.4%)

COMPARATIVE NUMBERS AT MATRICULATION

	1912-13	1913-14
From colleges—		
Graduates	44	54
With advanced standing	139	161
Without advanced standing	3	4
	<hr/> 186	<hr/> 219
From normal schools	15	9
From preparatory schools—		
On recommendation (wholly or mainly):		
In full undergraduate standing.....	344	356
In partial standing	1	6
Wholly on examination:		
In full standing	0	1
In partial standing	0	0
	<hr/> 345	<hr/> 363
As special students	48	44
	<hr/> 594	<hr/> 635
Total		

CLASSIFICATION BY MAJOR SUBJECTS

	1910-11	1911-12	1912-13	1913-14
Greek	4	10	11	11
Latin	42	38	36	27
Germanic Languages	77	78	67	58
Romanic Languages	35	35	34	41
English	153	139	146	140
Philosophy	5	5	5	6
Psychology	6	6	7	1
Education	57	52	67	71
History	185	188	187	144
Economics	149	136	162	211
Law	124	113	147	158
Pre-Legal	188	177	151	170
Graphic Art	51	53	46	46
Mathematics	22	24	33	33
Applied Mathematics	1	1	1	1
Physics	13	15	11	10
Chemistry	66	82	85	102
Botany	25	29	31	34
Physiology	61	76	68	84
Anatomy	2	4	....	....
Bacteriology	2	1	2	1
Zoology	19	14	15	31
Entomology	16	18	18	16
Geology and Mining.....	102	98	105	108
Civil Engineering	182	179	160	162
Mechanical Engineering	51	58	77	134
Electrical Engineering	109	120	82	50
Medicine	17†	35‡	53*	74*
	<hr/> 1764	<hr/> 1784	<hr/> 1807	<hr/> 1924

†Including 6 also counted under physiology.

‡Including 9 also counted under physiology; 1 under chemistry.

*Including 13 also counted under physiology; 2 under chemistry.

*Including 17 also counted under physiology; 1 under chemistry.

DISTRIBUTION OF ENTERING CLASS, 1913-14

FROM COLLEGES, ETC.

Baltimore Polytechnic Inst.....	1	Smith College	4
Baylor University	1	State College of Washington....	1
Beloit College	1	Syracuse University	1
Bethany College	1	Telluride Association	1
Boston University	1	Throop College	1
Bradley Polytechnic Institute..	3	Toronto University	1
Butler College	1	Trinity College	2
Central College of Iowa.....	1	University of California.....	26
College of the Pacific.....	22	Chicago	6
Colorado College	3	Colorado	7
Colorado School of Mines.....	1	Denver	1
Columbia University	1	Illinois	2
Dartmouth College	1	Indiana	3
Denison University	1	Kansas	3
Drake University	1	Leipzig	1
Florida State College.....	1	Michigan	2
Grinnell College	2	Minnesota	3
Hamilton College	1	Montana	4
Harvard College	2	Nevada	1
Hastings College	2	North Carolina..	1
Hendrick College	1	North Dakota....	3
Iowa State College.....	2	Oregon	4
James Milliken University.....	2	Redlands	3
Johns Hopkins University.....	1	Santa Clara.....	5
King's College	1	of the South....	1
Lake Forest College	2	South Dakota....	1
Lawrence College	1	So. California....	13
Luther College of Iowa.....	1	Tennessee	1
McMinnville College	1	Utah	4
Mass. Inst. of Technology.....	1	Virginia	2
Mills College	6	Washington	3
Montana College	1	Wisconsin	2
Montana State College of Agri- culture	1	Wyoming	1
New Hampshire College	1	Vanderbilt University	1
Northwestern University	2	Vassar College	1
Occidental College	8	Wellesley College	3
Oregon Agricultural College....	1	Western College	1
Pacific University	1	Western Maryland College.....	1
Pomona College	6	Western Reserve University....	1
Purdue University	1	Whitman College	1
Randolph-Macon College	1	Whittier College	1
Sapporo Agricultural College..	1	Willamette College	2
Simpson College	1	Yale University	1

FROM NORMAL SCHOOLS

Chadron (Neb.) State Normal	1	Los Angeles State Normal.....	1
Chico State Normal.....	1	San Jose State Normal.....	6

FROM PREPARATORY SCHOOLS

Aberdeen (Wn.) H. S.....	2	Eureka (Utah) H. S.....	2
Alameda H. S.	1	Exeter Union H. S.....	1
Alhambra H. S.....	1	Fallbrook H. S.....	2
Antioch H. S.....	1	Fowler H. S.....	2
Arms Academy (Shelburne Falls, Mass.)	2	Fullerton H. S.....	1
Ashland (Ore.) H. S.....	1	Gardena H. S.....	2
Audubon (Ia.) H. S.....	1	Gilroy H. S.....	1
Baker (Ore.) H. S.....	1	Glendale H. S.....	1
Bakersfield H. S.....	1	Glenwood Springs (Colo.) H. S. 1	
Belle Fourche (So. Dak.) H. S. 1		Grand Junction (Colo.) H. S. 1	
Belmont School	4	Greeley (Colo.) H. S.....	2
Berkeley H. S.....	2	Greenwich Academy	1
Boise (Idaho) H. S.....	3	Hanford H. S.....	1
Boone's University School.....	2	Harker School	1
Bostonia H. S.....	1	Harvard School	1
California School Mech. Arts.. 1		Hill Military Academy.....	3
Campbell H. S.....	2	Hilo (T. H.) H. S.....	1
Castilleja School	5	Hitchcock Military Academy... 1	
Central H. S. (Muskogee, Okla.) 1		Hollister H. S.....	1
Central H.S. (Springfield, Mass.) 1		Hollywood H. S.....	4
Central H. S. (Toledo, Ohio).. 2		Huntington Beach H. S.....	1
Centralpoint (Ore.) H. S.....	1	Imperial H. S.....	1
Chadron (Neb.) H. S.....	1	Jefferson Co. H. S. (Boulder, Mont.)	1
Clatskanie (Ore.) H. S.....	1	Johnstown (Pa.) H. S.....	1
Coalinga H. S.....	1	Joplin (Mo.) H. S.....	1
Coeur d'Alene (Idaho) H. S... 1		Kansas City (Mo.) H. S.....	1
Colton H. S.....	1	Kingsbury H. S.....	1
Compton H. S.....	1	Lawrenceville (N. J.) H. S.... 1	
Corona H. S.....	2	Lawrenceville (N. J.) School.. 1	
Coudersport (Pa.) H. S.....	1	Lodi Normal Institute.....	1
Culver Military Academy.....	2	Long Beach H. S.....	3
Dawson Springs (Ky.) H. S... 1		Los Angeles H. S.....	20
Denver (East Side) H. S.....	2	Los Angeles Man. Arts H. S... 3	
Eastern H. S. (Washington, D. C.)	1	Los Angeles Polytechnic H. S. 14	
Easton (Pa.) H. S.....	1	Lynbrook (N. Y.) H. S.....	1
Elko (Nev.) H. S.....	1	Manzanita Hall	9
Escondido H. S.....	2	Marion (Kans.) H. S.....	1
Everett (Wn.) H. S.....	1	Marysville H. S.....	1
		Monrovia H. S.....	2

Monterey H. S.....	1	San Jose H. S.....	14
Mountain View H. S.....	3	San Mateo H. S.....	7
Muncie (Ind.) H. S.....	1	Santa Ana H. S.....	2
Muskogee (Okla.) H. S.....	1	Santa Barbara H. S.....	1
National City H. S.....	1	Santa Clara H. S.....	1
Niagara Falls (N. Y.) H. S.....	1	Santa Cruz H. S.....	1
Oahu College (Prep.).....	1	Santa Maria H. S.....	1
Oakdale H. S.....	1	Santa Monica H. S.....	3
Oakland H. S.....	2	Santa Ynez H. S.....	1
Oak Park (Ill.) H. S.....	1	Seattle (Wn.), Broadway H. S. 1	
Occidental Academy	1	Sebastopol H. S.....	1
Oklahoma City (Okla.) H. S. 1		Selma H. S.....	1
Okmulgee (Okla.) H. S.....	2	Shasta Co. H. S.....	1
Ontario H. S.....	1	Shattuck School (Faribault,	
Orange H. S.....	1	Minn.)	1
Palo Alto H. S.....	36	Sheridan (Wyo.) H. S.....	1
Pasadena H. S.....	6	Sherman (Tex.) H. S.....	1
Phoenix (Ariz.) H. S.....	4	Sonora H. S.....	1
Placer Co. H. S.....	1	So. Pasadena H. S.....	2
Portland Academy	3	Spokane (Lewis & Clark) H. S. 2	
Portland, Or.:		Stadium H. S. (Tacoma, Wn.) 1	
(Jefferson) H. S.	6	Staunton (Va.) Military Acad. 1	
(Lincoln) H. S.....	1	Stockton H. S.....	4
(Washington) H. S.	2	Stuttgart (Ark.) H. S.....	1
Potter School (San Francisco) 1		Tacoma (Wn.) H. S.....	3
Redlands H. S.....	3	Tamalpais H. S.....	1
Redwood H. S.....	3	Throop Polytechnic Institute... 1	
Rigby (Idaho) H. S.....	1	Tonopah (Nev.) H. S.....	3
Riverside H. S.....	1	Trinity School (San Francisco) 2	
Riverside Polytechnic H. S.... 7		Tulare H. S.....	2
Rossville (Ill.) H. S.....	2	Ukiah H. S.....	2
Sacramento H. S.....	1	University H. S. (Chicago, Ill.) 1	
St. Ignatius Academy	1	University School (San Fran-	
St. John's Military School..... 1		cisco)	1
St. John's (Ore.) H. S.....	1	Univ. So. California Prep..... 2	
St. Louis, Mo. (Yeatman) H. S. 1		Valley City (N. D.) H. S.....	1
St. Luke's School (Wayne, Pa.) 1		Venice Polytechnic H. S.....	1
St. Matthew's School	1	Ventura H. S.....	2
Salinas H. S.....	2	Washburn School	2
Salt Lake Collegiate Institute.. 1		Wenatchee (Wn.) H. S.....	1
San Bernardino H. S.....	2	Westlake School	1
San Diego H. S.....	7	Willows H. S.....	2
San Francisco:		Winchester (Ill.) H. S.....	1
Girls' H. S.	1	Woodland H. S.....	1
Lowell H. S.	8	Yuma (Ariz.) H. S.....	1

REGISTRATION OF STUDIES.

Fifteen units constitute a normal semester's work. The following was the actual registration of undergraduates during 1913-14:

	Number of Students	
	First Semester	Second Semester
For 1 unit	0	0
2	0	0
3	0	0
4	0	2
5	0	2
6	0	0
7	2	0
8	1	3
9	0	5
10	9	10
11	9	12
12	29	38
13	155	153
14	241	235
15	482	500
16	323	258
17	154	146
18	125	120
19	0	5
20	1	1

PETITIONS BEFORE COMMITTEE ON REGISTRATION, 1913-14.

	Number of Students	
	First Semester	Second Semester
Total number of petitions acted upon.....	942	832
To change registration by dropping subjects, or taking up new subjects, or both.....	746	637
To change major subject.....	56	17
To register for fewer than 13 units.....	*85	†66
To register for more than 18 units.....	5	6
For leave of absence.....	48	54
Miscellaneous	55	82

*Of these 85 petitioning for fewer than 13 units, 53 are included in change of registration.

†Of these 66 petitioning for fewer than 13 units, 30 are included in change of registration.

STATISTICS OF GRADUATION.

The total number of degrees conferred in 1913-14 was 427, distributed as follows:

	Ph. D.	M. D.	J. D.	A. M.	Engr.	LL. B.	A. B.
Greek	1	...	...	4
Latin	6	...	...	8
Germanic languages	2	...	...	22
Romanic languages	3	...	...	5
English	9	...	...	25
English philology	1	...	...	...	...	...	...
Philosophy	3
Psychology	1
Education	8	...	...	19
History	1	...	...	3	...	...	39
Economics	1	...	...	1	...	...	34
Law	16	...	...	3	31
Graphic art	7
Mathematics	9
Applied mathematics
Physics	2	...	...	2
Chemistry	2	...	...	7	2	...	16
Botany	2	...	...	5
Physiology	18
Bacteriology
Zoology	1	...	...	4
Entomology	1	...	...	1
Geology and mining	2	3	...	15
Civil Engineering	3	...	41
Mechanical engineering	2	...	6
Electrical engineering	2	...	16
Medicine	12	...	...	...	...	...
	5	12	16	48	12	3	331

In the case of the 331 students who received the degree of bachelor of arts, the period of residence was as follows:

2 semesters	20
3 semesters	4
4 semesters	29
5 semesters	15
6 semesters	25
7 semesters	25
8 semesters	158
9 semesters	30
10 semesters	20
11 semesters	4
12 semesters	1
	<hr/>
	331

The 118 students who took their A. B. in less than 4 years were enabled to do this as follows ("Extra courses" meaning courses in excess of the normal 15 units per semester):

Through advanced credit from other institutions	80
Through advanced credit supplemented by extra courses	14
Through advanced credit supplemented by summer work	3
Through advanced credit supplemented by extra courses and summer work	6
Through summer work and extra courses	3
Through credit for extra entrance units and extra courses	4
Through credit for extra entrance units and extra courses and advanced credit	2
Through extra entrance units, summer work and extra courses.....	4
Through extra entrance	1
Through extra courses	1
	<hr/>
	118

ORRIN LESLIE ELLIOTT,
Registrar.

THE LIBRARIAN.

The library now comprises 239,122 volumes, a net increase for the year of 17,402 volumes. Of these 201,806 are at Stanford University and 37,316 in the Lane medical library at San Francisco. The statement of accessions is as follows:

Stanford University—

Volumes in library August 1, 1913.....	187,877
Added by purchase	8,401
Added by gifts and exchange.....	1,999
Added by binding.....	3,798
	<hr/>
Total volumes added.....	14,198
Less volumes withdrawn.....	269
	<hr/>
Net increase	13,929
	<hr/>
Volumes in library July 31, 1914.....	201,806

Lane medical library—

Volumes in library August 1, 1913.....	33,843
Added by purchase	2,044
Added by gifts and exchange	359
Added by binding	1,070
	<hr/>
	3,473
	<hr/>
Volumes in library July 31, 1914.....	37,316
Total volumes in university library July 31, 1914.....	239,122

Included in the foregoing statement are 1,811 volumes added to the law library, making an aggregate of 18,205 volumes now in that collection.

The expenditures for books, periodicals and binding, as indicated by the bills approved, are as follows:

Stanford University—

Books and periodicals	\$25,388.11
Binding	3,969.85

Lane medical library—

Books and current periodicals.....	4,008.90
Completion of sets, and binding	6,007.69
Barkan library of ophthalmology and otology.....	1,565.68

Total	\$40,940.23
-------------	-------------

The purchases have as usual been restricted to material needed for instructional and research work in the various departments of the university. The largest single order was that for filling the gap in our series of British sessional papers from 1880 to 1900, comprising about 2,000 volumes. This series is extremely valuable from several points of view, and when this order is filled this library will have one of the very few nearly complete sets available in this country. In the law library the collection of American statute law has been materially enlarged, and much has been accomplished in the way of completing the sets of reports of courts of last resort in the various States. We have had bound and indexed 542 volumes of the records of the California Supreme Court and District Courts of Appeal which have been coming to the library for several years past through the courtesy of Judge Melvin and Judge Sloss.

Believing the time had arrived when the existing system of departmental allotments from the book funds could be advantageously modified, the library committee submitted the following communication to the academic council at its meeting in May:

In the opinion of the library committee of the council, it is desirable that the academic council should express its views regarding the manner of distributing library funds. The committee requests the consideration of the plan proposed below, and an expression of opinion as to whether this or any other plan would meet with general approval.

The unit system of distributing funds has been continued to the present time as originally adopted, with some slight modifications. At the time of its adoption all the departments of the university were lacking in the fundamental necessities of books and periodicals. For this reason the general library needs were scantily provided for. The committee believes that at the present time these conditions have changed to a considerable extent and that a more elastic system of distribution may be advantageous. It is conceivable that some departments may be in need of larger annual allotments, while others may not need to use all their present allowance every year. Furthermore, the library could advantageously be supplied with many important works, such as the proceedings of learned societies, which no single department feels justified in ordering out of its own allotment. On the other hand, we recognize the desirability of protecting the reasonable yearly needs of each department from any excessive diversion of funds such as might make it impossible to satisfy these needs. The expenditure of the general fund is under the direction of the librarian with the supervision of the library committee, and any suggestions as to its wise expenditure are welcomed.

In the judgment of this committee the following plan would adequately protect the needs of all departments, remove the pressure upon departments to order each year up to the allotted limit, permit larger needs of some departments to be satisfied, and favor the satisfaction of more general library needs.

We recommend that the unit system of appropriations be continued subject to the following modifications:

1. Each department shall continue as heretofore to order such books as the department faculty shall approve, and the librarian shall continue to keep as heretofore the record of department orders and their costs.

2. When the orders of any department shall have reached a sum equal to that provided in the unit allotment for 1913-14, the librarian shall notify such department of the fact, and no further orders shall be filled

for such department until one month before the close of the fiscal year, when such orders may be placed as the condition of the funds renders possible. Any funds unappropriated by the first of the last month of the fiscal year shall revert to the general fund.

3. Should at any time the total appropriation made for the library be changed, the limits set for departmental orders may be changed.

The foregoing recommendations were adopted by the council and were approved by the board of trustees at its meeting on May 29, 1914, as were also the subjoined recommendations, likewise presented by the library committee of the council:

Whereas, it is advisable that a mode of procedure shall exist which shall serve to prevent misunderstandings and shall conserve the wise expenditure of funds, to this end it is recommended that:

1. Nominations of books or periodicals for the library shall, when possible, be submitted to and approved by the department faculty.

2. When any nomination of books or periodicals, made by individuals or departments, is deemed by the librarian to be for any reason unwise or inexpedient, he shall refer such case to the department faculty concerned, stating his reasons for his opinion. Should the department faculty not concur in his opinion, he may appeal the case to the library committee of the council for arbitration, and its action shall be binding. In general, however, the expressed endorsement of the department faculty after due consideration of objections offered should be considered final.

3. In cases where the librarian is requested to purchase books or periodicals, not bibliography, not ordered at the request of departments, and where differences of opinion arise as to the desirability of such purchases, the library committee of the council shall exercise supervision, as is provided in article VI of the powers and duties of academic committees in the standing regulations of the council.

The sum of \$500 was presented by the late Mr. Charles G. Lathrop to continue the purchase of material relating to California. Other noteworthy gifts were 626 volumes and 185 pamphlets mostly relating to mechanical engineering and electricity, presented by Mr. William R. Eckart. A collection of 453 volumes and 352 pamphlets and maps relating to Brazil was presented by Dr. John Casper Branner. Included in this collection were a set of the laws of Brazil from its earliest history to recent date, the publications of the Historical Institute of Brazil, and sets of the "Rio News," "O Novo Mundo" and "Correio Brasiliense." Professor Percy A. Martin has given 76 volumes and 16 pamphlets to the Brazilian library.

The library has forwarded to addresses on its exchange list: Trustees' series, Nos. 23, 24 and 25; Register, 1913-14; University series, 3 numbers; doctoral dissertations, 11, and to certain foreign institutions two numbers of the West Memorial lectures.

In conformity with a resolution adopted by the board of trustees at their meeting held June 27, 1913, the librarian was absent from the university from August 22d to September 27th on a tour of the eastern states, gathering data that might be of service in formulating plans for the proposed library building. He visited most of the larger structures of this sort erected within recent years, and consulted librarians who have had experience in planning libraries. He was met by all in a most cordial spirit of coöperation and accumulated much information that will be of use.

CLASSIFICATION AND CATALOGUING

The work accomplished by this department is indicated by the following extracts from Miss Sutliff's report for the year:

Number of volumes added to the shelf list:

New	10,797
Old	3,108
Continuations from bindery.....	2,430

Total16,335

Changes, corrections, etc..... 872

Number of volumes added to the catalogue:

New	10,273
Old	1,760
Continuations from bindery.....	2,345
Continuations in temporary covers.....	330

Total14,708

Recatalogued 898

Number of cards filed in the catalogue:

Typed cards	29,382
Library of congress cards.....	19,174
American library association cards.....	1,200
Berlin cards	794
Chicago cards	94
Harvard cards	84

Total50,728

To our union catalogue have been added:

Library of congress slips, about.....	87,000
Harvard cards	7,360
University of Chicago cards.....	4,656

Total99,016

If we add to the total of cards and slips filed the seven thousand or more serial cards that during the year must be withdrawn and refiled in the catalogue there is a grand total of nearly 157,000 which would take an expert about 145 days to file.

In addition to its regular work the catalogue department has prepared a list of the serial publications in the library. This work has taken at least half the time of one cataloguer since last November. This list will ultimately form a part of the joint list of serials in the more important libraries of California, which is to be published by the California Library Association.

SERIAL DEPARTMENT

Miss Brooks, chief of this department, reports a net increase of 33 in the serials on our subscription list, making a total of 1,476 now regularly received and bound. An average of 90 pieces of mail are received daily. There have been bound 3,605 volumes at a total cost of \$3,981.00.

LOAN DEPARTMENT

Mr. Park submits the following:

The work of the loan department has been carried on in the regular way for the year 1913-14. No new problems have arisen. Certain old ones, however, have assumed an importance which is worthy of note.

The problem of handling "required readings" seems to have become more acute in the last year. More books have been signed for on the hour list than in former years. Furthermore, students have been slower in returning hour books at the end of the hour. This means a great deal of trouble for the loan desk assistants. It takes time to search the library for a student who fails to turn in his book,—especially when the student has anticipated such a search. Perhaps the only remedy for this evil is a stricter enforcement of the system of fines. Another abuse of the hour book arrangement has grown up. One student has been allowed to make reservations for other students. Out of this privilege has arisen a practice of signing the names of others in order to hold the book for one's self. I see no way of overcoming this abuse except by requiring each student to make his own reservation.

The crowding of books in the stacks is causing more and more inconvenience and loss of time. Many books are now shelved at a distance from the desk. Each year a redistribution of books on the shelves is necessary in order to make room for new books. This summer two assistants were kept busy for more than a month at this work. It is to be hoped that a new building will put an end to this trouble in the near future.

The circulation of books for the year is as follows:

August	711
September	15,926
October	22,357
November	16,792
December	13,352
January	16,470
February	18,449
March	13,132
April	12,950
May	5,809
June	853
July	646

Total138,447

LANE MEDICAL LIBRARY

From Miss Ophüls' report the following is extracted:

As previously stated, 3,473 volumes have been added to the Lane medical library, thereby increasing the number on its shelves to 37,316 volumes, exclusive of duplicates and incomplete volumes of journals. The work of filling the gaps in the periodical sets has continued without interruption, and as a result 96 titles have been added to the list of completed sets. Of these, 37 were journals newly added to our list of current subscriptions, 12 were for the Barkan library, and 47 were old sets previously in the library in an incomplete state.

More than 100 journals have been added to the current list, increasing the number regularly received by purchase and gift to 460. For the convenience of readers lists both alphabetic and classified of these periodicals have been printed and mounted under glass on a periodical stand in the reading room.

The library has been peculiarly fortunate in being the recipient by gift of numerous books and pamphlets. From the San Francisco County Medical Society 510 volumes were received; also many reprints and duplicate current periodicals. The San Rafael public library generously transferred to us 329 volumes from the library of the late Dr. Dubois of that city. Dr. Philip King Brown presented an original letter from Dr. Edward Jenner, and also two framed photographs; Dr. A. E. Brune, 16 volumes; Dr. A. Eichler, 126 volumes, 5 reprints; Dr. A. Finch, of Astoria, Oregon, 221 volumes; Dr. C. E. Hablutzel, San Jose, 55 volumes; Dr. Vard Hulen, 7 volumes, 29 reprints; Dr. R. L. Jump, of Oakland, 106 volumes, 25 reprints; Dr. J. Leffler, 61 volumes, 24 reprints; Dr. A. L. Lengfeld, 14 volumes, 110 reprints; S. T. Linklater, Hillsboro, Oregon, 4 boxes of unbound periodicals; Dr. R. Major, 45 volumes, 28 reprints; Dr. J. H. Mules, 127 volumes; Dr. E. S. O'Brien, Merced, Cal., 187 volumes; Dr. W. Ophüls, 20 volumes, 215 reprints; Paris Faculté de Médecine, 50 volumes; Dr. Langley Porter, 12 periodicals from 1908-1913; Dr. C. M. Richter, 17 volumes; Dr. Emmet Rixford, 2 journals, 8 volumes, 32 reprints; Dr. Grant Selfridge, 155 volumes; Dr. Dudley Smith, Oakland, 212 volumes; Dr. John C. Spencer, 63 volumes; Dr. Stanley Stillman, 58 volumes, 700 reprints; Dr. Ray L. Wilbur, 3 journals, 31 volumes, 375 reprints; Wisconsin State Historical Society, 74 volumes, 104 reprints.

In cataloguing the sections of anatomy, histology, physiology and bacteriology have been completed and those of public health and general medicine catalogued in part. All of the current accessions by purchase have been catalogued, and also part of the gifts. The number of cards added to the catalogue is 8,708, and to the shelf list 1,422. All subject headings have been thoroughly revised and cross-references made where needed. Analytical cards have been made for several collective works, such as Koller and Wassermann's *Handbuch der pathogenen Mikroorganismen*. Deutsche Chirurgie and St. Mary's Hospital collected papers.

LIBRARY STAFF

During the year the library staff comprised George Thomas Clark, librarian; Mary Jeannette Woodruff, stenographer; Alice Newman Hays, reference librarian; Helen Binnering Sutliff, chief cataloguer; Louise Ophüls, medical librarian; Charles V. Park, chief of loan desk; Elizabeth Hadden, chief of order department; Lucia May Brooks, chief of serial department; Frederick Edward Brasch, law librarian; Lena M. Keller, cataloguer; Clementine B. Porter, cataloguer, first semester; Louise M. Peters, cataloguer; Mary Elvira Smith, cataloguer; Laura Agnes Williamson, cataloguer; Margaret Brinton, cataloguer; Marcella Carmelita Duff, cataloguer; Roxana G. Johnson, cataloguer, second semester; Helen Avery Gale, assistant in order department; Lillian Agnes Hollmann, assistant at loan desk; Ethel G. Heald, assistant in serial department; Minna Stillman, reference assistant; Anna Gertrude Hall and Jeanette Catherine Morgan, cataloguers, Lane library; Annie Harriet Keatinge, assistant, Lane library; Hannah Lillian Todd, bindery assistant; Helen Katherine Kreps, Thomas Lafayette Dyer, Talmadge Laughner Smith, Philip P. D. Perham, David Porter Dunlap, Albert Harold Morosco, Francis Foss Wheeler, student assistants; Jean Oliver, student assistant in Lane library.

GEORGE THOMAS CLARK,
Librarian.

THE DEAN OF WOMEN

The year opened with more accommodations on the campus for housing students than ever before; but at the beginning of the second semester it was evident that too many had been provided for women. Roble Hall had fifteen vacancies, Alvarado Hall thirteen, and Madrono Hall ten. The "five hundred limit," and the return of an uncertain number of graduates for the fifth-year work required by the state law for teachers of high-school grades, together with the readjustment of the personnel in the sorority houses at the beginning of the second semester, make the housing problem a constant one. The year's experience resulted in the decision of Mrs. Hurd to transfer the young women remaining in Alvarado Hall to Madrono, and to convert Alvarado Hall into a house for men.

The women's conference had perplexing social problems, due to the craze for dancing that swept the country, and that made especially difficult a consistent attitude on the part of the women of the university. Many cases of discipline were acted upon by the council, the judicial members of the conference, who steadily maintained the decisions of previous conferences against radical modes of dancing. Numerous letters from colleges and universities in all parts of the country asking advice were evidence that our student control was meeting with more success because its tasks were easier than those in other communities.

The dean of women acting as trustee of a loan fund, with the assistance of the secretary of the Y. W. C. A. and a member of the women's conference, has loaned to deserving students nearly four hundred dollars. Employment for the usual number of needy students has been provided, and in the second semester the clerical part of the work was assumed, because the Young Women's Christian Association, which regularly undertakes it, was without a secretary.

The dean of women has given considerable time in various ways to the promotion of the plans and the raising of funds for the women's club-house, because she believes the club-house will unite sorority and non-sorority women. She has given unlimited time to all the social phases under discussion in the student councils, to the attendance of the student activities, and to the chaperonage of the social functions. Office hours every morning have been kept in room 203, and weekly afternoons at home have been continued.

EVELYN WIGHT ALLAN,
Dean of Women.

THE APPOINTMENT SECRETARY

Until comparatively recently students who were prepared in the so-called "culture" subjects have had little or no difficulty in obtaining good positions in the high schools of the state, but with the present trend of the high school curriculum, emphasizing as it does the more "practical" subjects—domestic science and arts, manual training and arts, agriculture, and commercial branches—the work of placing our students has grown more and more difficult. There is, in general, an excess of teachers trained in the "culture" subjects, while the number of requests received for teachers in more "practical" lines, as also in music, drawing, general science, and physical training and hygiene, is much greater than the number of candidates listed.

During the year 1913-14 the total number of candidates registered for positions in the office of the appointment secretary was 395. Of this number 100 were new registrations; 295 old (the large majority with positions, but wishing to be transferred to more desirable ones).

The total number of requests on the part of schools for candidates was 354. Of this number 336 were for teaching and administrative positions; 18 were for miscellaneous duties, private secretary, stenographer, bookkeeper, library assistant, commercial chemist, governess, companion and the like.

Complete reports regarding appointments during the summer of 1914 have not yet been made. When full data are received, the number of appointments for the year will total about 200.

The total number of requests for information concerning candidates from teachers' agencies was 65. The total number of sets of credentials sent out regarding candidates was 766.

Requests for candidates have been received from California, Maine, Vermont, North Carolina, Georgia, Alabama, Illinois, Utah, New Mexico, Oklahoma, Wyoming, Arizona, Nevada, Oregon, Washington, Montana, North Dakota, Alaska, Hawaii and China.

SUSAN BROWN BRISTOL,
Appointment Secretary.

STUDENT ADVISER

The work was carried on the first semester by K. L. Schaupp and the second semester by A. W. Ambrose.

The primary work of the student adviser has been in student control. Being an ex-officio member of the university conference and student council, it has been necessary that he do much of the detail as well as advisory work in student control. The great good the student adviser can do in student control is to foresee trouble and speak a word in advance to avoid it. The council has been keen to uphold the rules of the university, and the students have co-operated heartily in maintaining a standard worthy of the university. This has resulted not only in a generally harmonious attitude within the student body, but also a very desirable condition on the campus. The conditions are better than the student adviser has seen them during the past five years.

The student adviser is a connecting link between the student council and the student affairs committee, or between the students and the faculty in the matters of discipline.

During the last semester the student adviser has attempted to work on the scholarship of the freshmen and sophomores. He personally interviewed all the underclassmen that received mid-semester warnings and discussed their studies with them. The results were evident.

During the first part of the semester the student adviser is of particular aid to new students. He arranges study cards and discusses with them matters of a personal nature as well as those of general interest. He is responsible for the organization of the freshman class.

Besides the above-mentioned things, he has answered letters of parents, secured employment for students, answered letters concerning student control, and has tried to be of service at all times.

ARTHUR WARREN AMBROSE,
Student Adviser.

THE REPORT OF THE CHAPLAIN

Policy. The following letters will disclose the underlying principles of the work of the church :

Stanford University, Cal., Sept. 1, 1913.

TO THE FACULTY :

By recent resolution of the board of trustees the memorial church is now constituted in the same manner as an academic department, and thus becomes an organic part of the university.

In the presence of this new order, and the rapid restoration of the church, I appeal to each one of you for your coöperation and help. The department which is symbolized by the church exists to teach principles vital to the function of the university, for morals and religion go far in the development of character and the regulation of conduct.

There is not one among you who has forgotten the early religious influences of home, or school, or college, and who is not anxious that these same potent influences shall be kept alive and at work among the sons and daughters of Stanford.

Growing knowledge may seem to have invalidated much associated with the ecclesiastical or theological training of your youth, but I dare to suggest that nothing can ever supplant the fundamental principles of your faith, or the ideals of morality which so splendidly mark your character.

The church exists to serve this constituency in the development of manners, morals and religion. It is not tied to any denominational system, neither is it dominated by any particular ecclesiastical policy or polity or party.

It is hospitable to every type of religious thought and is a living demonstration of the possibility of christian unity. Not one breath of disagreement has marred the inner life of the church during the ten years past.

I ask your support and attendance at the services of the church—or the chapel pro tem.—because I want this department of our corporate life to embrace the whole body. And this, of course, without interference with your normal church membership.

Whatever your faith or lack of faith, you have your contribution to make to the corporate religious life of the university, and as your padre I claim it.

Yours faithfully,

D. CHARLES GARDNER.

Stanford University, Cal., Sept. 1, 1913.

TO THE MEMBERS OF THE CLASS OF 1917:

A PASTORAL LETTER

As chaplain of the university I bid you hearty welcome to Stanford.

I invite you cordially to a share in our corporate religious life. The memorial church is rapidly approaching completion and our joy will be full when once again we are permitted to worship within its walls. Meanwhile we hold a daily service in the vestry of the church at 8 o'clock a. m., and the Sunday service—unless otherwise announced—at 11 o'clock in the old chapel.

The church is a department of the university, constituted in the same manner as an academic department. It is entirely undenominational in character and method, and has no formal membership.

Our desire is to make the church a common meeting place for all, without regard to doctrinal or ecclesiastical differences. Attendance at its services will in no way interfere with your normal church relationship, and is purely voluntary.

May I warn you that university life has its distractions and dangers? If you are wise you will not allow anything to distract you from the main object of your presence here, viz., study. Nor should you allow any temptations to wean you from the good habits of home life.

You come here with certain endowments of mind and body. Struggle to keep the body in subjection, your imagination clean, your conscience sound, your reason poised and whole, and your will renewed and strengthened continually by self-discipline and prayer.

Thus, and thus only, will you be happy, useful men and women, enjoying your many student privileges and fitting yourselves for the work of the world.

If I can help or advise you at any time I shall be glad to do so, and you will find me at my office, the vestry of the church, any day, except Monday, from 9 to 12.

With all good wishes, I am

Yours cordially,

D. CHARLES GARDNER.

SERVICES.—The outstanding event of the year was the resumption of public worship in the memorial church in the first semester. Pending the completion of the organ we have not attempted to revive the vesper service on Sunday afternoon. The attendance on Sunday morning aggregated 14,700; average, first semester, 366; second semester, 605. Daily, at 8 a. m., a short service has been held in the vestry, the total attendance for the year being 2,316, an average of 18.

The chaplain officiated at all these services, and preached or made the address, except as follows:

During the first semester three clergymen were invited to preach on Sunday morning, namely:

Presbyterian:

Rev. W. K. Guthrie.

Methodist:

Bishop Hughes.

Congregational:

President Blaisdell.

Acting under the generous provision of the board of trustees, two special preachers were invited during the second semester: For a period of six weeks, Dr. Francis G. Peabody, of Cambridge, Mass.; for three weeks, Bishop F. J. McConnell, of Denver. Dr. Peabody's stay was cut short by the illness of his wife, and Dr. Ostrum, a distinguished evangelist, occupied the pulpit on one Sunday morning.

CLASSES.—During the year the chaplain has given

- (1) a Course of lectures on the life and teaching of Christ.
- (2) A series of instructions on the fundamentals of religion to a voluntary class.

PHILANTHROPIC.—Social service work has been fostered, "The campus auxiliary to the Stanford clinics" organized and collected \$300 for charity work among our hospital patients. Many individual students were helped along during the year, and each sick student in hospital visited.

PASTORAL.—The chaplain has maintained office hours daily from 9 to 12 for consultation with students. In addition he has made calls in halls and fraternities and ministered to persons in sorrow or distress.

CHOIR.—During the year the choir has reached a high degree of efficiency under the discipline and direction of Mr. Louis H. Eaton, the organist and choir master.

D. CHARLES GARDNER,
Chaplain.

THE LELAND STANFORD JUNIOR MUSEUM

During the year the work of the museum has been confined principally to routine and the care of collections in storage. Few alterations were made, as practically all exhibits must be gone over after contractors finish cleaning up the debris and grounds adjacent to the museum.

The attendance still continues exceptionally good, noticeably of eastern and foreign visitors. Their interest is greater in things Californian than in most other subjects just at this time.

The various departments at the university still continue to use the collections in their study courses to a most gratifying degree.

The donations include a still larger collection of rich Venetian glassware from Salviati & Company, of Venice. This last donation also includes the first shipment of the mosaic exhibit, which will show the mosaic art from beginning to end. This collection will be installed in room F as soon as the room is in condition. This addition makes the exhibit of Venetian glassware the largest and most varied on the continent.

From the Vina ranch was received a collection of Indian stone implements and beads. These implements, which were picked up on the ranch, are many of them of a very unique type and shape.

From Mr. John Beatty, of Hydaburg, Alaska, was received a pair of "paddles," or tribal emblems.

The medical department sent down a mummy and case, the history of which is unknown.

From Guy C. Miller, and J. C. Franklin, of Palo Alto, were received some early Stanford photographs, while the Stanford collection was further enriched by the current numbers of the "Daily Palo Alto" and the "Alumnus."

HARRY C. PETERSON,
Curator.

APPENDIX V

PUBLICATIONS OF THE FACULTY ADMINISTRATION

DAVID STARR JORDAN, Chancellor:

Alsace-Lorraine, Spirit of: *Everyman*, Edinburgh, Oct., 1913

Idem: A study in conquest: *Atlantic Monthly*, vol. 113, May, 1914.

America's conquest of Europe. American Unitarian Association, Boston, 1913. •

Catalogue of the fishes known from the waters of Korea (with C. W. Metz): *Memoirs of the Carnegie Museum*, vol. 6, no. 1, pub. no. 75.

Ce que l'Amérique peut enseigner à l'Europe: *La Vie Internationale*, vol. 4. May, 1913.

Contribution of school hygiene to human conservation (with L. M. Terman): *Dietetic and Hygiene Gazette*, vol. 29, November, 1913.

Eugenics of war: *Eugenics Review*, vol. 5, October, 1913.

Guarantee of peace: *Peace Forum*, vol. 2, July, 1914.

Land of the sleepless watchdog: *Unpopular Review*, vol. 2, July-September, 1914.

Liberation of Macedonia: *Everyman*, June, 1914.

Nightmares of Europe: *Peace Yearbook*, 1914.

Notes on a collection of fishes from the island of Shikoku, in Japan, with a description of the new species, *Gnathypopsiyonis* (with W. F. Thompson): *Proceedings of the U. S. National Museum*, vol. 46, August 23, 1913.

Prenatal influences: *Journal of Heredity*, vol. 5, January, 1914.

Standing incentives to war: *Unpopular Review*, vol. 1, January-March, 1914.

Suddenness of war: *Independent*, vol. 75, September 18, 1913.

Taxing the cost of living: *Harper's Weekly*, vol. 58:15, August 23, 1913.

Value of nature study: *Guide to Nature*, vol. 6, October, 1913.

War and waste: a series of discussions of war and war accessories: Doubleday Page, New York, 1913.

War trusts: *Harper's Weekly*, vol. 58:8, October 25, 1913.

What Europe thinks of us. I-II: *World's Work*, vol. 27:28, April-May, 1914.

What shall we fight? *Harper's Weekly*, vol. 58, December 20, 1913.

What shall we say? Nos. 39-55.

JOHN CASPER BRANNER, President:

Brief grammar of the Portuguese language. Ed. 2, N. Y., 1914.

Commencement address: *Stanford Alumnus*, vol. 15, May, 1914.

Earthquakes and business in the west: *California Outlook*, vol. 16, January 10, 1914.

Geologia elementar. Ed. 2, Paris, 1914.

Inaugural address: Publications, trustee's series No. 24, 1913.

Reports of the Stanford expedition to Brazil (with others). Vol. 1, Stanford university, 1914.

Seismological notes: *Bulletin of the Seismological Society of America*, vol. 4, June, 1914.

Some of the obstacles to North American trade in Brazil: *Journal of Race Development*, vol. 4, April, 1914.

Reviews of

Landor, Across unknown South America: *Science*, n. s., vol. 39, April, 1914; Woodworth, Geological expedition to Brazil and Chile: *Bulletin of the American Geographical Society*, July, 1914

GEORGE ARCHIBALD CLARK, Academic Secretary:

Fur seal census for 1913: *Science*, n. s., vol. 38, December, 1913.

The new fur seal investigation: Reprinted from *Science*, n. s., vol. 39, June 12, 1914.

Testimony before committee on expenditures in the department of commerce: H. R. committee on expenditures in the department of commerce, *Hearings*. Investigation of the fur seal industry of Alaska, February 20, 24, 25, 26, 1914, no. 2, Washington, 1914.

ANATOMY

ARTHUR WILLIAM MEYER:

Debt of human embryology to the human practitioner: *California State Journal of Medicine*, December, 1913.

Haemal nodes in some carnivora and rodents. Studies on hemal nodes III: *Anatomischer Anzeiger*, vol. 45, 1913.

Hemolymph nodes of the sheep, I. Studies on the hemolymph nodes. L. S. J. U. publications, *University Series*, 1914.

Occurrence of supernumerary spleens in dogs and cats, with observations on corpora libera abdominales, IV. Studies on hemal nodes: *Anatomical Record*, vol. 8, March, 1914.

Osteology, redivious; a criticism: *ibid.*, vol. 8, May, 1914.

Some observations on the umbilical structures of the new born: *American Journal of Obstetrics and Diseases of Women and Children*, vol. 69, 1914.

Spolia anatomica: *Journal of Anatomy and Physiology*, vol. 48, ser. 3, vol. 9, January, 1914.

Supposed experimental production of hemolymph nodes and accessory spleens, V. Studies on hemal nodes: *Journal of Experimental Zoology*, vol. 16, February, 1914.

APPLIED MATHEMATICS

SIDNEY DEAN TOWNLEY:

Blinksterne: *Publications of the Astronomical Society of the Pacific*, vol. 26, June, 1914.Classification of variable stars: *ibid.*, vol. 25, October, 1913.*Reviews of*Comptes-Rendus des Séances de la Quatrième Conférence de la Commission Permanente et de la Deuxième Assemblée Générale de l'Association Internationale de Sismologie: *Bulletin of the Seismological Society of America*, vol. 4, March, 1914; *Journal of the Royal Astronomical Society of Canada*, May-June, 1913: *ibid.*, vol. 3, December, 1913; origin of earthquakes: *ibid.*, vol. 3, September, 1913.

ERNEST WILLIAM PONZER:

*Reviews of*Ebner, Technische infinitesimalrechnung: *Bulletin of the American Mathematical Society*, vol. 20, December, 1913; Muller, Gedentagebuch für mathematiker: *ibid.*

BACTERIOLOGY AND IMMUNITY

WILFRED H. MANWARING:

On intraperitoneal lysis of tubercule bacilli: *Journal of Experimental Medicine*, vol. 18, 1913.

BOTANY

DOUGLAS HOUGHTON CAMPBELL:

Genus *Macroglossi* Copeland: *Philippine Journal of Science*, vol. 9, sec. C, Botany. June, 1914.Morphological study of the Genus *Pallavicinia* (with Florence Williams): L. S. J. U. publications, *University Series*, 1914.Notes on collecting ferns, with particular reference to certain Bornean ferns of considerable interest: *Journal of Sarawak Museum*, vol. 2, June, 1914.

GEORGE JAMES PIERCE:

Behavior of certain micro-organisms in brine: *Carnegie Institution of Washington Publication*, vol. 193.

LEONAS LANCELOT BURLINGAME:

Morphology of *Araucaria braziliensis*, II. The ovulate cone and female gametophyte: *Botanical Gazette*, vol. 57, June, 1914.

CHEMISTRY

EDWARD CURTIS FRANKLIN:

Potassium ammonomagnesate $\text{Mg. (NHK)}_2 \cdot 2\text{NH}_3$: *Journal of the American Chemical Society*, vol. 35, October, 1913.

Review of

Jones, New era in chemistry: *Science*, n. s., vol. 40, July, 1914.

STEWART WOODFORD YOUNG:

Mechanical stimulus to crystallization (with W. J. Van Sicklen): *Journal of the American Chemical Society*, vol. 35, September, 1913.

Effect of light on the electrical discharge of suspended particles (with L. W. Pingree): *Journal of Physical Chemistry*, vol. 17, November, 1913.

JOHN PEARCE MITCHELL:

Determination of the dustfall in the neighborhood of cement plants: *Journal of Industrial and Engineering Chemistry*, vol. 6, June, 1914.

CIVIL ENGINEERING

JOHN CHARLES LOUNSBURY FISH:

Extra top width of new fills: *American Railway Engineering Association Bulletin*, August, 1913.

Idem: *Proceedings of the American Railway Engineering Association*, vol. 15, 1914.

ECONOMICS

MURRAY SHIPLEY WILDMAN:

The increased gold supply and cost of living: Report of the committee on cost of living, *Report*, April, 1914. *Commonwealth Club of California Transactions*, vol. 9, April, 1914.

VICTOR J. WEST:

Nominations and elections: *National Municipal Review*, vol. 3, July, 1914.

Review of

Collins, The 14th amendment and the states: *Illinois Law Review*, vol. 8, March, 1914.

EDUCATION

ELLWOOD PATTERSON CUBBERLEY:

Politics and the country-school problem: *Educational Review*, vol. 47, January, 1914.

Report of the survey of the public school system of school district no. 1, Multnomah county, Oregon, city of Portland, November 1, 1913.

Rural life and education. Houghton, New York, 1914.

State and county educational reorganization. Macmillan, New York, 1914.

State and county school administration (56 articles), Monroe. *Cyclopedia of Education*, vol. 5, 1914.

Vocational education (with D. S. Snedden and Mary Weeks): Houghton, Mifflin Co., Boston, 1914.

Work of the normal school: *Normal Outlook*, vol. 4, December, 1913.

Editor of Riverside text-books in education; Emerson, evolution of the educational ideal; Terman, hygiene of the school child.

Review of

Moore, How New York administers its schools: *School Review*, vol. 22, February, 1914.

PERCY ERWIN DAVIDSON:

Professional training of school officers: *Educational Review*, vol. 46, December, 1913.

LEWIS MADISON TERMAN:

Concerning psycho-clinical expertness: *Journal of Educational Psychology*, vol. 5, March, 1914.

Idem: *The Training School Bulletin*, vol. 11, March, 1914.

Contribution of school hygiene to human conservation (with D. S. Jordan): *Dietetic and Hygiene Gazette*, vol. 29, November, 1913.

Effects of school life upon the nutritive processes, health and the composition of the blood: *Popular Science Monthly*, vol. 84, March, 1914.

Health work in the schools (with Dr. E. B. Hoag): Houghton, Mifflin Co., Boston, 1914.

Hygiene of the school child: Houghton, Mifflin Co., Boston, 1914.

Medical inspection, hygiene teaching, physical training and special schools for defectives in Portland, Oregon: *Report of the Survey of the Public School System of Portland*. The World Book Company, 1914.

Psychological principles underlying the Binet-Simon scale, and some practical considerations for its correct use: *Journal of Psycho-Asthenics*, vol. 18, December, 1913.

Recent literature in juvenile suicides: *Journal of Abnormal Psychology*, vol. 9, April-May, 1914.

Report of the Buffalo conference on the Binet-Simon tests of intelligence: *Pedagogical Seminary*, vol. 20, December, 1913.

Significance of intelligence tests for mental hygiene: *Journal of Psycho-Asthenics*, vol. 18, March, 1914.

Sleep of school children: *The Child*, vol. 4, July, 1914.

Social hygiene: The real problem of conservation: *North American Review*, vol. 198, September, 1913.

Suggestions for revising, extending and supplementing the Binet intelligence tests: *Journal of Psycho-Asthenics*, vol. 18, September, 1913.

Teeth and civilization: *The Forum*, vol. 51, March, 1914.

Reviews of

Dresslar, School hygiene: *Science*, n. s., vol. 38, October 31, 1913;
Idem: *Alumni Quarterly*, Indiana university, April, 1914; Rapeer,
 School health and administration: *Science*, n. s., vol. 39, May 15,
 1914.

JESSE BRUNDAGE SEARS:

The needs of 134 city school systems (with Clara Cram): *American
 School Board Journal*, vol. 48, June, 1914.

ELECTRICAL ENGINEERING

HARRIS JOSEPH RYAN:

High voltage laboratory: *Stanford Alumnus*, vol. 15, December, 1913.
 Sphere-gap discharge voltages at high frequencies (with J. C. Clark):
Proceedings of the American Institute of Electrical Engineers, vol.
 33, June, 1914.

JAMES CAMERON CLARK:

Experiments with sustained high frequency high voltage: *Journal of
 Electricity Power and Gas*, vol. 33, July 18, 1914.
 Fires as a cause of short circuits on high voltage lines: *ibid.*, vol. 31,
 December 27, 1913.
 Laboratory source of sustained high voltage at high frequency: *ibid.*,
 vol. 33, July 4, 1914.
 Sphere-gap discharge voltages at high frequencies (with H. J. Ryan):
Proceedings of the American Institute of Electrical Engineers, vol.
 33, June, 1914.

ENGLISH LITERATURE AND RHETORIC

WILLIAM HERBERT CARRUTH:

Selections from an address on eugenics: Twelve university lectures.
 Dodd Mead, N. Y., 1914.

WILLIAM DINSMORE BRIGGS:

Certain incidents in Ben Johnson's life: *Modern Philology*, vol. 11,
 no. 2, October, 1913.
 Studies in Ben Jonson: *Anglia*, vol. 37, December 2, 1913.

EVERETT WALLACE SMITH:

The new Stanford: *Sunset*, vol. 31, September, 1913.

VAN WYCK BROOKS:

The malady of the ideal: Fifield, London, 1913.
 Twilight of the arts: *Poet Lore*, vol. 24, October, 1913.

EDITH RONALD MIRRIELES:

Homestead: *Sunset*, vol. 31, December, 1913.

ENGLISH PHILOLOGY

EWALD FLÜGEL:

Alphonso Gerald Newcomer: *Stanford Alumnus*, vol. 15, September, 1913.

Specimen of the Chaucer dictionary: Letter E: *Anglia*, vol. 37, December 2, 1913.

ENTOMOLOGY AND BIONOMICS

VERNON LYMAN KELLOGG:

Baby and the bee: *Unpopular Review*, vol. 1, April-June, 1914.

Beetles becoming parasites: *Science*, n. s., vol. 39, March 6, 1914.

Ecto-parasites of mammals: *American Naturalist*, vol. 48, May, 1914.

Ecto-parasites of the monkeys, apes and man: *Science*, n. s., vol. 38, October 24, 1913.

Faces and races: *Journal of Heredity*, vol. 5, June, 1914.

Mallophaga of the Vizcacha (with S. Nakayama): *Entomological News*, vol. 25, May, 1914.

New Trichodectes from Baja California (with S. Nakayama): *Psyche*, vol. 21, June, 1914.

What is the matter with the colleges? *Unpopular Review*, vol. 1, January, 1914.

Reviews of

Woods: Influence of monarchs: *American Naturalist*, vol. 48, April, 1914; Huard, Abrégé de géologie: *Science*, n. s., vol. 39, January, 1914.

RENNIE WILBUR DOANE:

Disease-bearing insects of Samoa: *Bulletin of Entomological Research*, n. s., vol. 4, February, 1914.

How *Oryctes rhinoceros*, a Dynastid beetle, uses its horn: *Science*, n. s., vol. 38, December 19, 1913.

Rhinoceros beetle (*Oryctes rhinoceros*, L.) in Samoa: *Journal of Economic Entomology*, vol. 6, December, 1913.

GEOLOGY AND MINING

JOHN CASPER BRANNER (see under president of the university).

JAMES PERRIN SMITH:

Acceleration in the development of the fossil Cephalopoda: L. S. J. U. Publications, *University Series*, 1914.

Middle Triassic marine invertebrate faunas of North America: U. S. Geological Survey, *Professional Paper*, no. 83, Washington, 1914.

AUSTIN FLINT ROGERS:

Geologic and microscopic study of a magmatic copper sulphide deposit in Plumas county, California, and its modification by ascending secondary enrichment (with H. W. Turner): *Economic Geology*, vol. 9, June, 1914.

Nomenclature of minerals: *Proceedings of the American Philosophical Society*, vol. 52, November-December, 1913.

Upward secondary sulphide enrichment and chalcocite formation at Butte, Montana: *Economic Geology*, vol. 8, December, 1913.

Wilkeite, a new mineral of the apatite group, and openite, its alteration product, from southern California (with A. S. Eakle): *American Journal of Science*, vol. 37, March, 1914.

CYRUS FISHER TOLMAN:

Recent advances in the application of geology to the study of ore deposits: *Mineral Industry*, vol. 21, 1913.

Recent advances in the study of sulphide enrichment: *Mining and Scientific Press*, vol. 108, January 5, 1914.

GALEN HOWELL CLEVINGER:

Electrolysis of aqueous solutions of the simple alkaline cyanides (with M. L. Hall): *Transactions of the American Electrochemical Society*, vol. 24, 1913. Reply to discussion: *ibid.*

Estimation of gold, silver, and platinum by fire assay (with H. W. Young): *Mining and Scientific Press*, vol. 108, April 11, 1914.

Influence of copper upon the physical properties of steel (with B. N. Ray): *Bulletin of the American Institute of Mining Engineers*, no. 82, October, 1913.

Is there a complex ore problem? Symposium: *Metallurgical and Chemical Engineering*, vol. 12, May, 1914.

Temperature of certain operations in the metallurgy of copper and lead: *ibid.*, vol. 11, August, 1913.

Discussion of the following papers at the Denver meeting of the American Electrochemical Society: Possible applications of the electrical furnace, the art of electric zinc smelting, the electrolysis of cyanide solutions: *Transactions of the American Electrochemical Society*, vol. 24, 1913.

HAYES WILSON YOUNG:

Estimation of gold, silver and platinum by fire assay: (With G. H. Clevenger) *Mining and Scientific Press*, vol. 108, April 11, 1914

GERMANIC LANGUAGES

KARL G. RENDTORFF:

Christmas in Germany: *Pacific Unitarian*, vol. 22, December, 1913.

HERMANN HILMER:

Schallnachahmung, wortschöpfungen und bedeutungswandel auf grund der wahrnehmung von schlag fall bruch und derartigen vorgängen dargestellt an einigen lautwurzeln der deutschen und der englischen sprache: M. Niemayer, Halle, 1914.

FRIEDRICH ALEXANDER WYNEKEN:

Neu San Francisco und die Panama-Pacific Exposition: *Grenzboten*, vol. 72, November 5, 1913.

GREEK

AUGUST TABER MURRAY:

Editor of Xenophon: Anabasis for school and college use: Scott, Foresman & Co., Chicago, 1913.

ERNEST WHITNEY MARTIN:

The birds of the Latin poets: L. S. J. U. Publications, *University Series*, 1914.More poetry (Almira Billings, 1830): *Palo Altan*, June 12, 1914.

HISTORY

EPHRAIM DOUGLASS ADAMS:

Point of view of the British traveler in America: *Political Science Quarterly*, vol. 29, June, 1914.

Power of ideals in American history: Yale University Press, New Haven, 1913. (Yale lectures on responsibilities of citizenship.)

Editor of correspondence from the British archives, concerning Texas, pt. 8: *Southwestern Historical Quarterly*, vol. 17-18, October, 1913-July, 1914.*Review of*Adams, Transatlantic historical solidarity, vol. 56: *Dial*, April 1, 1914.

ARLEY BARTHLOW SHOW:

The new culture-history in Germany: *History Teacher's Magazine*, vol. 4, October, 1913.*Idem.* Die kulturgeschichtsschreibung Karl Lamprechts (ins Deutsche übertragen von Fritz Friedrich): *Vergangenheit und Gegenwart*, bd. 4, March 3, 1914.

EDWARD BENJAMIN KREHBIEL:

"A Matter of Planes": Carnegie Endowment for International Peace, Division of Intercourse and Education, May, 1914.

Report of the peace commission (E. B. Krehbiel, chairman). *Official Report* of the second world's christian citizenship conference, Portland, July 1, 1913. (Resumé.)

Reviews of

Fullerton, Problems of power, a study of international politics from Sadowa to Kirk-Kilisse: *Dial*, October 1, 1913; Japan and Japanese-American relations, Clark University addresses, edited by Blakeslee: *American Journal of International Law*, vol. 8, no. 1, January, 1914; Low, The governance of England: *Dial*, vol. 56, June 16, 1914; Pietro Orsi; Cavour and the making of modern Italy: *ibid.*, vol. 56, May 16, 1914.

PAYSON JACKSON TREAT:

Public lands, various articles: McLaughlin & Hart, *Cyclopedia of American Government*. Appleton, New York, 1914.

Reviews of

Blount, The American occupation of the Philippines, 1898-1912: *Journal of Race Development*, vol. 4, April, 1914; Gulick, The American-Japanese problem: *Dial*, vol. 56, May 16, 1914; Kawakami, Asia at the door: *ibid.*, vol. 56, May 16, 1914; Mannix, Memoirs of Li Hung Chang: *American Political Science Review*, vol. 8, February, 1914.

HENRY LEWIN CANNON:

Royal finances of the reign of Henry III: *American Historical Association Report*, 1912, Washington, 1914.

Reviews of

McKechnie, Magna Carta: a commentary on the great charter of King John: *American Historical Review*, vol. 19, July, 1914. Salzmänn. Mediaeval byways: *ibid.*, vol. 19, April, 1914.

EDGAR EUGENE ROBINSON:

Distribution of the presidential vote of 1912: *American Journal of Sociology*, vol. 20, July, 1914.

Divisions in the democracy: *Argonaut*, vol. 34, April 12, 1914.

How the tariff bill becomes a law: *ibid.*, vol. 73, October 11, 1913.

Parties in the middle west: *Springfield Republican*, April 21, 1914.

Recent manifestations of sectionalism: *American Journal of Sociology*, vol. 19, January, 1914.

Review of

Memoir of General William R. Boggs: *Mississippi Valley Historical Review*, June, 1914.

PERCY ALVIN MARTIN:

Editor of Oliveira de Lima, evolution of Brazil compared with that of Spanish and Anglo-Saxon America: L. S. J. U. Publications, *University Series*, 1914.

Review of

Landor, In South American wilds: *Dial*, vol. 56, February 1, 1914.

LATIN

HENRY RUSHTON FAIRCLOUGH:

Burt Estes Howard: *Stanford Alumnus*, vol. 15, November, 1913.

Horace's view of relation between satire and comedy: *American Journal of Philology*, vol. 34, 1913.

Note on Quod . . . contuderit (Horace Carm., IV 3.8): *Classical Review*, vol. 27, November, 1913.

Idem: *Proceedings of the American Philological Association*, vol. 44, 1913.

Contributing editor of art and archaeology.

JEFFERSON ELMORE:

The Greek Cautio in Cicero, Fam. vii 18 1: *Transactions of the American Philological Association*, vol. xlv, 1913.

Reviews of

Decker, Juvenalis declamens, Etude sur la rhetorique declamatoire dans les satires de Juvenal: *Classical Philology*, vol. 9, July, 1914.

WILLIAM CHISLETT, JR.:

Material for American composition: *English Journal*, vol. 3, April, 1914.

Sources of Ralph Roister Doister: *Modern Language Notes*, vol. 29, June, 1914.

Three ancient critics of modern education: *Classical Journal*, vol. 9, June, 1914.

Notes on

Gilbert White and the poet Thomson: *Notes and Queries*, ser. 11, vol. 9, March 21, 1914. Method in writing: *Modern Language Notes*, vol. 29, March, 1914. Vocational schools: *Nation*, vol. 97, November 27, 1913. *Idem*: *New York Evening Post*, December 4, 1913. Walter Pater and Bishop Berkeley: *Dial*, vol. 56, June 1, 1914. Worth While: *ibid.*, vol. 56, February 16, 1914.

LAW

FREDERICK CAMPBELL WOODWARD:

Cases on the law of sales of goods. West Publishing Co., St. Paul, 1913.

ARTHUR MARTIN CATHCART:

Law of quasi contracts: *Modern American Law*, Blackstone Institute, vol. 7, p. 363-452, Chicago, 1914.

WESLEY NEWCOMB HOFFELD:

Some fundamental legal conceptions as applied in judicial reasoning: *Yale Law Journal*, vol. 24, November, 1913.

CHARLES ANDREWS HUSTON:

Law, its origin, nature and development: *Modern American Law*, Blackstone Institute, vol. 1, p. 47-181, Chicago, 1914.

Review of

Coudert, Certainty and justice: *Harvard Law Review*, vol. 27, March, 1914.

MECHANICAL ENGINEERING

WILLIAM FREDERICK DURAND:

Development in prime movers: *Electrical World*, vol. 63, January 3, 1914.

Interpretation of electric current flow in terms of the electron theory: *Journal of Electricity, Power and Gas*, vol. 32, February 28, 1914.

Investigation of surge phenomena by means of model experiments: *Western Engineering*, vol. 3, December, 1913.

GUIDO HUGO MARX:

Composition of university staffs: *Monroe, Cyclopedia of Education*, New York, 1911-1913, vol. 5.

WILLIAM RANKINE ECKART:

Hydraulic laboratories: *Stanford Alumnus*, vol. 15, December, 1913.

MEDICINE

RAY LYMAN WILBUR:

The physician of the future: *Bulletin of the American Academy of Medicine*, vol. 14, August, 1913.

Teaching of therapeutics: *Journal of the American Medical Association*, vol. 61, August 23, 1913.

Therapeusis of pericarditis: *ibid.*, vol. 63, July 25, 1914.

Urobilin: its clinical significance (with Thomas Addis): *Archives of Internal Medicine*, vol. 13, February, 1914.

Idem: *Transactions of the Association of American Physicians*, 1913.

JOSEPH OAKLAND HIRSCHFELDER:

A new culture medium for the gonococcus: *Journal of the American Medical Association*, vol. 62, March 7, 1914.

Treatment of tuberculosis with a soluble vaccine: *Interstate Medical Journal*, vol. 21, no. 3, 1914.

EMMET RIXFORD:

On the mechanics of production of certain fractures: *Journal of the American Medical Association*, vol. 61, September 20, 1913.

ALBERT BAKER SPALDING:

Some principles governing the indications for caesarian section: *California State Journal of Medicine*, vol. 12, April, 1914.

Value of abdominal measurements in pregnancy; a statistical study: *Journal of the American Medical Association*, vol. 61, 1913.

GEORGE BURBANK SOMERS:

Anatomy and surgical utility of sacro-uterine ligaments (with F. E. Blaisdell): *Journal of the American Medical Association*, vol. 61, October 4, 1913.

WILLIAM OPHÜLS:

Anatomic structure and function: *Journal of the American Medical Association*, vol. 63, August 15, 1914.

Experimental embolism of the arterioles in guinea pigs with hardened erythrocytes of triton (*diemyctylus*) torosus and of *chondrotus tenebrosus*: *Proceedings of the Society of Experimental Biology and Medicine*, vol. 11, 1913.

Nephritis in ground squirrels (*Citellus beechyi*): *ibid.*, vol. 11, 1913.

ALBERT CORNELIUS CRAWFORD:

Action of epinephrin on the guinea-pig uterus (with E. Barbara Will): *Proceedings of the Society of Experimental Biology and Medicine*, April, 1914.

Conclusions from an experiment in teaching pharmacology: *Boston Medical and Surgical Journal*, vol. 169, August, 1913.

Contribution to the chemistry of the pituitary pressor compounds (with Zeno Osterberg): *American Journal of Pharmacy*, vol. 86, July, 1914.

HARRY EVERETT ALDERSON:

Dermatological case reports: *California State Journal of Medicine*, vol. 11, October, 1913.

Herpes Zoster in a patient with spinal cord syphilis: *Journal of Cutaneous Diseases*, vol. 32, March, 1914.

Rhinoscleroma: *ibid.*, vol. 32, April, 1914.

Pityriasis Rosea: *ibid.*, vol. 32, May, 1914.

THOMAS ADDIS:

Urobilin: its clinical significance (with R. L. Wilbur): *Archives of Internal Medicine*, vol. 13, February, 1914.

LEONARD WHEELER ELY:

Chronic arthritis: *Journal of the American Medical Association*, vol. 61, August 30, 1913.

Diseases of bones and joints: Surgery Publishing Co., New York, 1914.

Injection treatment of tuberculous joints: *Journal of the American Medical Association*, vol. 61, October 18, 1913.

La patologia della tubercolosi articolare: *Archivio di Ortopedia*, vol. 30, 1913.

FRANK ELLSWORTH BLAISDELL:

Anatomical observation on a lipoma simulating direct inguinal hernia: *Anatomical Record*, vol. 7, September, 1913.

Anatomy and surgical utility of sacro-uterine ligaments (with G. B. Somers): *Journal of the American Medical Association*, vol. 61, October 4, 1913.

Labeling microscopic slides: *Science*, n. s., vol. 38, November, 1913.

Measurement on a human embryo, 30 mm. long: *Journal of Anatomy and Physiology*, vol. 48, January, 1914.

LEO ELOESSER:

Local anesthesia in major operations on the head, face and jaws: *Transactions of the California State Dental Association*, vol. 40, 1913.

Implantation of joints: *California State Medical Journal*, vol. 11, December, 1913.

WALTER WHITNEY BOARDMAN:

Demonstrations of gastro-intestinal plates: *Denver Medical Times*, vol. 33, January, 1914.

HENRY HERBERT YERINGTON:

Consideration of tardy syphilis (with Florence M. Holsclaw): *American Journal of Diseases of Children*, vol. 7, January, 1914.

WILLIAM REDWOOD PRICE CLARK:

The prognosis of pulmonary tuberculosis: *California State Journal of Medicine*, August, 1914.

FLORENCE MABEL HOLSCRAW:

Consideration of tardy syphilis (with H. H. Yerington): *American Journal of Diseases of Children*, vol. 7, January, 1914.

JULIAN MAST WOLFSOHN:

Cutaneous reaction in syphilis—third communication: *California State Journal of Medicine*, September, 1913.

Physiology of the visceral nervous system with special reference to vagatony and sympathicotony: *Journal of American Medical Association*, vol. 62, April 18, 1914.

Scale for measuring the intelligence of children.

ZENO OSTENBERG:

Contributions to the chemistry of the pituitary pressor compounds (with A. C. Crawford): *American Journal of Pharmacy*, vol. 86, July, 1914.

PHYSICAL TRAINING AND PERSONAL HYGIENE

CLELIA DUAL MOSHER:

Physiologic treatment of congestive dysmenorrhea and kindred disorders associated with the menstrual function. Third note: *Journal of the American Medical Association*, vol. 62, April 25, 1914.

PHYSICS

FERNANDO SANFORD:

Atomic ionization and atomic charges: *Science*, n. s., vol. 38, November 21, 1913.

Discovery of contact electrification: *Popular Science Monthly*, vol. 83, November, 1913.

On the nature of the volta effect; a reply: *Physical Review*, n. s., vol. 2, December, 1913.

PHYSIOLOGY

FRANK WALTER WEYMOUTH:

Relation of metathrombin to thrombin: *American Journal of Physiology*, vol. 32, September 2, 1913.

PSYCHOLOGY

FRANK ANGELL:

Projection of the negative after-image in the field of the closed lids: *American Journal of Psychology*, vol. 24, October, 1913.

JOHN EDGAR COOVER:

Feeling of being stared at—experimental: *American Journal of Psychology*, vol. 24, October, 1913.

Thought-transference—experimental: *Proceedings of the Society for Psychical Research*, London, vol. 27, January, 1914.

Union high school questionnaires: *Education*, vol. 34, October-November, 1913.

ROMANIC LANGUAGE

OLIVER MARTIN JOHNSTON:

Old French estovoir: *Romanic Review*, vol. 4, October-December, 1913.

Repetition in Dante's Divine Comedy: *Transactions of the American Philological Association*, vol. 44, 1913.

COLBERT SEARLES:

The three kings of Racine's *Andromaque*, act 5, scene 2: *Modern Language Notes*, vol. 29, June, 1914.

Editor of Racine, *Andromaque*. Boston, 1914.

Editor of Sand, *Francois le Champi*: *Oxford French Series*; N. Y., 1914.

AURELIO MACEDONIO ESPINOSA:

Comparative notes on New Mexican and Mexican Spanish folktales: *Journal of American Folklore*, vol. 27, April-June, 1914.

New Mexican Spanish Folklore, part VI, Los Trovos del viejo Vilmas; part VII, more folktales; part VIII, short stories: *Journal of American Folklore*, vol. 27, April-June, 1914.

Nombres de bautismo nuevomejicanos. Observaciones sobre su evolucion fonética: *Revue de Dialectologie Romane*, vol. 5, December, 1913.

Review of

J. Vicuña Cifuentes, *Romances Populares y vulgares recogidos de la tradicion oral chilena*: *Bulletin de Dialectologie Romane*, vol. 5, December, 1913.

ZOOLOGY

CHARLES HENRY GILBERT:

Lantern fishes of Japan: *Memoirs of the Carnegie Museum*, vol. 6, August, 1913.

Two cottoid fishes from Monterey Bay, California: *Proceedings of the U. S. National Museum*, vol. 47.

Contributions to the life history of the sockeye salmon No. 1: *Report of the British Columbia Commissioner of Fisheries*, 1913.

HAROLD HEATH:

Anatomy of the two Brazilian land shells, *Anostoma depressum* and *Tomigerus clausus*: *Papers of the Stanford Expedition to Brazil in 1911*, vol. 1, Stanford University, 1914.

EDWIN CHAPIN STARKS:

The fishes of the Stanford Expedition to Brazil: *Papers of the Stanford Expedition to Brazil in 1911*, vol. 1, Stanford, 1914.

WALTER KENRICK FISHER:

New star fishes from the Philippine Islands, Celebes and the Moluccas: *Proceedings of the U. S. National Museum*, vol. 46, September 30, 1913.

12

13

14

15

16

17

18

19

20

21

22

23

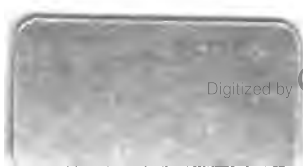
24

25





Am... ..



Forrestal
~~INDEX~~
Summer 1984

Digitized by

